

APPENDIX A
SAMPLING AND ANALYSIS PLAN
FOR THE
NON-TIME CRITICAL REMOVAL SUPPORT WORK PLAN
TRONOX NAVAJO AREA URANIUM MINES
SECTIONS 35/36 (CLIFFSIDE) MINES
MCKINLEY COUNTY, NEW MEXICO

Prepared for

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1. INTRODUCTION

Weston Solutions, Inc. (WESTON®), the Superfund Technical Assessment and Response Team (START-3) contractor, was contracted by U.S. Environmental Protection Agency (EPA) Region 6 under Contract Number EP-W-06-042 and Task Order (TO) Number 0041 to conduct a Removal Site Assessment (RSA) and an Engineering Evaluation and Cost Analysis (EE/CA) as part of Non-Time-Critical Removal Support (NTCRS) at the Tronox Navajo Area Uranium Mines (NAUM) Sections 35/36 (Cliffside) Mines site (Site) located in McKinley County, New Mexico. The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) number assigned to the Site is NMN000607481.

START-3 has prepared this site-specific Sampling and Analysis Plan (SAP) to describe the field sampling and analytical scope of work to be performed at the NAUM Section 35/36 Mines as part of the Task Order requirements. A Quality Assurance Project Plan (QAPP) and a Quality Assurance Sampling Plan (QASP) are included as Appendices A and B, respectively, to this SAP.

START-3 is responsible for the oversight and ultimate implementation of this SAP. START-3 and any other contractors involved in the implementation of this QASP will furnish the personnel, materials, equipment, services, and facilities necessary to perform the NTCRS activities. The oversight agency for these activities is EPA Region 6.

1.1 OBJECTIVES

The objectives of this task order are to conduct a RSA and EE/CA to evaluate the environmental impacts and determine a removal alternative for the surface radiological contamination associated with the legacy Kerr McGee mines (Section 35 [Elizabeth Shaft] and Section 36 [Cliffside]) operations by determining the level and extent of contamination and the exposure pathways. The objectives will be achieved by evaluating field and laboratory analytical results obtained during the RSA and EE/CA field activities. Direct reading instruments and soil sample analysis will be utilized to ascertain Radium-226 concentrations for comparison to a risk-based

action level of 3×10^{-4} , which is established by EPA to be comparable to a dose of 12 millirem per year (mrem/yr) above background.

The RSA is currently the sole focus of this SAP. EE/CA field activities will be dictated by the RSA results; therefore, those activities cannot be fully described at this time. The SAP will be amended at a later date to include EE/CA activities prior to their initiation. This SAP is a dynamic document that may be amended as required by site conditions.

1.2 PROJECT TEAM

The Project Manager, David Bordelon, will be responsible for the overall management of the project. The Project Team Leader (PTL), Robert Sherman, will be responsible for implementing field activities as described in the Task Order Work Plan. The Project Health Physicist, Robert Schoenfelder, Certified Health Physicist (CHP), will ensure that data generated are of known quality sufficient to support the intended decisions and that the quality of the data is communicated to the project decision-makers. The Quality Assurance Officer (QAO), Jan Cristner, P.E., is responsible for implementing project quality procedures for all site activities. The Field Health Physicist and Field Safety Officer (FSO), Sam Cheek, will manage the field laboratory.

The PTL will be responsible for the technical quality of work performed in the field during the site activities and will serve as the START-3 liaison to EPA Region 6 in the field. The PTL, with the concurrence of EPA, will direct START-3 in conducting work in accordance with the Work Plan. The CHP will work remotely and will consult with on-site staff as needed. The START-3 FSO will be responsible for providing overall site health and safety support.

2. SITE BACKGROUND

2.1 SITE LOCATION AND DESCRIPTION

The Region 6 Tronox NAUM Area comprises approximately 100 square miles within the Ambrosia Lake Sub-District (ALSD) in McKinley County, New Mexico. The ALS D is located within the Grants Mining District (GMD), which is an area of uranium mineralization occurrence approximately 100 miles long and 25 miles wide encompassing portions of McKinley, Cibola, Sandoval, and Bernalillo counties of New Mexico. Main access into the Region 6 Tronox NAUM Area is provided via New Mexico State Roads 605 and 509. The Site is located in the ALS D, McKinley County, New Mexico approximately 25 miles northwest of Grants, and 3.5 miles northwest of the intersection of New Mexico State Highways 509 and 605. It is composed of two former underground uranium mines that are located in Sections 35 and 36, T14N, R9W that have been identified as eligible for abatement activities subject to the Tronox NAUM settlement.

2.2 SITE HISTORY

In April 2014, the United States (U.S.) and the Anadarko Litigation Trust (“Litigation Trust”) entered into a proposed settlement agreement with Anadarko Petroleum Corporation and some of its affiliates. The settlement was approved by the U.S. District Court in January 2015, and the U.S. Environmental Protection Agency (EPA) is expected to receive funding from the Litigation Trust for the assessment and subsequent cleanup of over 50 Tronox Navajo Area Abandoned Uranium Mines (Tronox NAUM) sites located in both an EPA Region 6 jurisdictional area and an EPA Region 9 jurisdictional area.

There are 22 legacy uranium mine operations that are eligible for Litigation Trust funding use in the Region 6 Tronox NAUM Area. All of these mines have gone through some form of closure operations and removal of operational surface features. Most of these mines were operated as wet mines, where the underground workings were dewatered and the collected mine water discharged to nearby surface drainage features such as creeks and arroyos. Little environmental data currently exists on these mines in general or specifically regarding risks to the public health

and/or the environment and/or any threat abatement actions that may be necessary. EPA Region 6 has been tasked to obtain the data required to evaluate the risks posed by these legacy mine sites and conduct appropriate risk abatement activities.

The mines were developed and operated by Kerr McGee until 1984, when operational control was turned over to Quivira Mining Company, which was a subsidiary of Kerr McGee. The mines were sold/transferred to Rio Algom Mining Company in 1989. Rio Algom was acquired by BHP in 2000, which has now merged with Billiton to form BHP-Billiton.

The Section 35 Mine was mined to a depth of 1,396 feet. It was operated from 1971-1985 on land that was and is currently owned by the mining company. The uranium ore was produced from the Westwater Canyon member of the Jurassic Age Morrison Formation. The mine produced 2,500,000 tons of ore during its operational history. Similar to the Section 36 Mine, this mine is also classified as a “wet mine.” While operational, the average discharge rate of water from the mine was 1,000 gallons per minute (gpm). The water was largely untreated and discharged to the surface water drainage features. As with the Section 36 Mine, the New Mexico Department of Environment (NMED) approved the backfilling of mined out stopes in the Section 35 Mine with uranium mill tailings sand as a preventative measure to prevent stope and/or tunnel collapse to facilitate continued mining operations. The mill tailing sands were transported from the adjacent uranium mill operated by the mining company. Uranium mill tailings are known to contain elevated levels of radium-226 and associated progeny, and may contain mill process chemicals. The Section 35 Mine is currently under a compliance order/permit from both NMED and Minerals Management Division (MMD) of the New Mexico Energy and Mineral Department.

The Section 36 Mine (aka Cliffside) was mined to a depth of 1,497 feet. It was operated from 1960-1984 under a mineral rights lease. The property that the mine resides on belongs to the State of New Mexico Land Office. The uranium ore was produced from the Westwater Canyon member of the Jurassic Age Morrison Formation. The mine produced 893,140 tons of uranium ore during its operational history. This mine was a “wet mine,” and, while operational, the mine had an average mine water discharge rate of 1,400 gpm. This water was largely untreated and

discharged to the surface water drainage features. In addition to actively pumping water from the mine, NMED approved the backfilling of mined out stopes with uranium mill tailings sand as a preventative measure to prevent stope and/or tunnel collapse to facilitate continued mining operations. The mill tailing sands were transported from the adjacent uranium mill operated by the mining company. Uranium mill tailings are known to contain elevated levels of radium-226 and associated progeny and may contain mill process chemicals. The Section 36 Mine is currently under a compliance order/permit from the NMED. The Mine was released from further action by the Minerals Management Division MMD in 1999.

In 2011, as part of the EPA San Mateo Creek Basin assessment activities, the EPA ASPECT platform (plane) conducted an aerial gamma screening survey of the ALSA, including the mines that compose this Site. The ASPECT survey indicated high levels of gamma radiation on both of the mine sites and also indicated that wastes from these mines have migrated off-site and onto adjacent properties. Data obtained from recent surface soil gamma radiation surveys conducted by Rio Algom through MMD verifies the off-site migration of the mine-related wastes from the Section 35 and 36 Mines. Therefore, for the purposes of the NTCRS, the Site boundary will be defined by the extent of contamination that can be directly linked to the mine waste sources associated with the Section 35 Mine and the Section 36 Mine through contiguous surface contamination or other methods and in consultation with the EPA Federal On-scene Coordinator FOSC(s) (Task Order Manager [TOM]).

3. FIELD INVESTIGATION ACTIVITIES

Field investigation activities that will be conducted during the RSA are discussed in the NTCRS QASP (Appendix B). Specifically, gamma scanning and soil sampling procedures, risk assessment and derivation of a removal action level, and the analytical approach that will be used during the RSA are discussed. Relevant EPA guidance documents and Standard Operating Procedures (SOPs) for field sampling methods are included in the QASP. Detailed quality assurance (QA) information, including Data Quality Objectives, is presented in the site-specific Quality Assurance Project Plan (QAPP) provided in Appendix A. The tentative schedule for the completion of the NTCRS activities is included as Table 5-2 in the Work Plan.

3.1 OVERVIEW OF SCANNING/SAMPLING ACTIVITIES

The RSA approach will consist of scanning for gamma radiation using direct-reading instruments and collecting samples of soil and other miscellaneous media for laboratory gamma spectroscopic analysis.

Before the assessment begins, background areas will be identified and measured. A background area is a non-impacted area representative of the properties to be assessed with similar physical, biological, chemical, and radiological characteristics against which readings at residential sites can be compared. Background areas will be selected by location, gamma radiation level, and geological formation. To establish a background area, START-3 will collect soil samples to be analyzed for Ra-226 and conduct stationary 1-minute gamma radiation count rate readings above each sample location using a 2-inch by 2-inch sodium iodide detector (2x2 NaI). For statistical modeling, a minimum of 20 samples and measurements will be collected for a background location. Background locations will be as close as practical to the areas to be assessed.

The primary areas of concern will be the areas that are shown to have elevated readings on the ASPECT aerial survey (Figure 3-1 of the QASP). Direct gamma scans will be conducted over the area using hand-held instruments mounted on a Utility Terrain Vehicle (UTV), on a baby buggy, or a backpack. The gamma scans will cover a percentage of the surface sufficient to determine which areas are above the Derived Concentrated Guideline Level (DCGL). Further

details are provided in the project QASP (Section 3.2.1). Additional one-minute stationary scaler readings will be made at set locations. Soil samples will be collected for laboratory analysis. The soil samples will be dried, homogenized, sieved, and analyzed in a field analytical laboratory using a Multi-Channel Analyzer (MCA). Some soil samples will be sent to an off-site analytical laboratory to confirm the field laboratory results.

3.2 OVERVIEW OF THE PROJECT QUALITY ASSURANCE PROGRAM

The quality objectives for this project are to collect samples and field information that are technically sound and properly documented, and to validate and report data that are statistically valid and of known precision and accuracy. The DQO process is a systematic approach for defining the criteria that the data collection design should satisfy. The DQO process was developed using the seven-step process set out in the *Guidance for the Data Quality Objective Process*, EPA QA/R5.

The project organization provides an understanding of the roles and responsibilities that each party assumes during the RSA portion of this project. START-3 will provide an independent chain-of-command to the QAO to ensure that proper checks and balances are maintained during the execution of this project. Any individual assigned to a quality assurance/quality control (QA/QC) responsibility has this independent line of communication available to him/her. Project QA/QC personnel have the authority to stop work if the QAPP requirements are not met. The QAPP provides detailed methodology and specific responsibilities to ensure that data collected during this project is gathered, processed, stored, and utilized in a manner that exceeds the existing standards provided by the EPA, industry, and other State and Federal agencies.

APPENDIX A

QUALITY ASSURANCE PROJECT PLAN (QAPP)

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A PROJECT MANAGEMENT

Weston Solutions, Inc. (WESTON[®]), the Superfund Technical Assessment and Response Team (START-3) contractor, has been tasked by the U.S. Environmental Protection Agency (EPA) Region 6 under Contract No. EP-W-06-042, Task Order (TO) Number 0041 (Appendix A) to conduct a Removal Site Assessment (RSA) and an Engineering Evaluation/Cost Analysis (EE/CA) as part of Non-Time-Critical Removal Support (NTCRS) at the Sections 35/36 (Cliffside) Mines (Site) located in McKinley County, New Mexico. The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) number assigned to the Site is NMN000607481. As part of the EE/CA, START-3 has prepared this Quality Assurance Project Plan (QAPP) to describe procedures that will be used to collect samples and generate analytical data to support the EE/CA.

START-3 is responsible for the oversight and ultimate implementation of this QAPP. START-3 and any other contractors involved in the implementation of this QAPP will furnish the personnel, materials, equipment, services, and facilities necessary to perform the NTCRS activities. The oversight agency for these tasks is EPA Region 6.

A1 PROJECT/TASK ORGANIZATION

START-3 will provide a team of fully trained personnel, including the multi-disciplinary technical staff that shall provide the knowledge and expertise necessary to complete the required tasks. Additionally, START-3 will provide a management structure that supports and compliments the technical team. START-3 will utilize a field laboratory located in the project field office, as well as an off-site commercial laboratory for laboratory analysis.

A1.1 Purpose and Background

This QAPP is based on the most recent EPA model QAPP format, *EPA Requirement for Quality Assurance Project Plan, EPA QA/R-5*, (EPA, 2001), and presents current EPA methods for analysis based on the *CLP Statement of Work (SOW) for Multi-Media, Multi-Concentration Organics Analysis (SOM01.2)* (EPA, 5 October 2006, Updated 12 February 2007, amended 11

April 2007) and *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846) Final Update IV, 3 January 2009.

A1.2 Roles and Responsibilities

The project organization provides an understanding of the roles and responsibilities that each party assumes during the RSA portion of this project. START-3 shall provide an independent chain-of-command to the Quality Assurance Officer (QAO) to ensure that proper checks and balances are maintained during the execution of this project. Any individual assigned to a quality assurance/quality control (QA/QC) responsibility has this independent line of communication available to him/her. Project QA/QC personnel have the authority to stop work if the QAPP requirements are not met.

Table A-1 depicts the associated personnel responsibility matrix. The QA/QC roles and responsibilities of key project personnel are described in the following sections.

A1.2.1 Project Manager

The Project Manager, David Bordelon, will ensure the overall management and quality of work performed under this project. He will assure that all project goals and objectives are achieved in a high-quality and timely manner. All QA/QC and nonconformance issues will be addressed by Mr. Bordelon in coordination with the Project Team Leader (PTL) and the QAO for corrective action.

A1.2.2 Project Team Leader

The Project Team Leader (PTL), Robert Sherman, is responsible for planning, implementing, monitoring, and controlling all work. The Project Team Leader is the single point of contact for coordination with the EPA and will have, as a minimum, the following responsibilities:

- Maintain close communication and coordination with the EPA Task Order Managers (TOMs), including reporting any and all problems encountered in conducting tasks associated with the project.
- Provide personnel, equipment, and materials necessary to complete the project.
- Provide direction for field activities to measure gamma radiation.

- Implement document control and chain-of-custody (COC) procedures utilizing SCRIBE and Response Manager modules.
- Implement the site-specific health and safety plans and provide site safety supervision for all on-site personnel, including subcontractor employees, if utilized.
- Take immediate corrective action when performance is not acceptable.
- Implement and manage the elements of this QAPP. Ensure that the performance of assigned tasks adheres to all QA, QC, and COC procedures specified in the QA program and project plans.

A1.2.3 Quality Assurance Officer

The Quality Assurance Officer (QAO), Ms. Jan Cristner, P.E., is responsible for implementing project quality procedures for all site activities. Ms. Cristner has the following responsibilities:

- Participate in field project activity readiness reviews and inspections.
- Approve fieldwork variances before work continues.
- Perform audits as requested.
- Review and approve all nonconformance reports and corrective action reports.
- Approve and maintain the approved QAPP.

A1.2.4 Project Health Physicist

The Project Health Physicist, Bob Schoenfelder, Certified Health Physicist (CHP), will ensure that all data generated are of known quality sufficient to support the intended decisions and that the quality of the data is communicated to the project decision-makers. Mr. Schoenfelder's responsibilities include the following:

- Develop and implement the QAPP.
- Maintain close communication with the EPA TOMs.
- Serve as the laboratory point of contact.
- Establish and monitor compliance with project Data Quality Objectives (DQOs).
- Review analytical data for compliance with project Data Quality Indicators.
- Notify the PTL and QAO of any data deficiencies and initiate any applicable nonconformance reports.
- Conduct audits of laboratory procedures as appropriate.

A1.2.5 Project Chemist

The Project Chemist, Jeff Wright, will manage the laboratory procurement and analytical data. Mr. Wright's responsibilities include the following:

- Implement QAPP requirements.
- Interface with the Project Health Physicist to verify that QA procedures are implemented.
- Verify that field laboratory procedures meet project QA requirements.
- Notify the Project Health Physicist and QAO of any data deficiencies and initiate any applicable nonconformance reports.

A1.2.6 Problem Definition/Background

The site history and background information for the current project are detailed in the following subsections.

A1.3 Definition of Problem

The Section 35 Mine and the Section 36 (Cliffside) Mine operated in the Ambrosia Lake Subdistrict of the Grants Mining District from 1960-1985. The mines were "wet mines," while operational, and each mine had an average mine water discharge rate of over 1,000 gallons per minute (gpm). This water was largely untreated and discharged to the surface water drainage features. Additionally, contaminated soil and other materials were deposited on the surface due to the mining practices of the period. These historical underground mining operations contributed waste (uranium and other radionuclides) to the ground surface in the areas surrounding the Section 35 and 36 Mines.

A1.4 Background

Site-specific background information can be found in the Sampling and Analysis Plan (SAP).

A2 PROJECT/TASK DESCRIPTION

START-3 is providing technical support to EPA Region 6 for the RSA and EE/CA. The objectives of the project are to investigate the nature and extent of site-related radiological contamination associated with the Sections 35 and 36 (Cliffside) mine sites, and to develop and

evaluate the potential remedial alternatives for the site in accordance with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and with the National Oil and Hazardous Substances Pollution Contingency Plan (National Contingency Plan [NCP]).

This project RSA and EE/CA are designed to assess the nature and extent of contamination in soil near and downgradient of the Sections 35 and 36 (Cliffside) Mines. Gamma scanning will be conducted and soil samples will be collected from the mine sites and downgradient areas. The data will be used to develop and evaluate potential remedial alternatives for the site. Field tasks, sampling methods, maps, and plans are presented in detail in the Sampling and Analysis Plan (SAP).

A2.1 Schedule

Field activities will commence on 13 July 2015. An estimated schedule of major work breakdown structure (WBS) elements is provided as Table 5-2 in the Task Order 0041 Work Plan.

A2.2 Site-specific Action Levels

The action level for the site is an exposure of 12 millirems per year (mrem/yr). START-3 will use EPA's Preliminary Remediation Goals (PRG) Calculator software to develop a site-specific Derived Concentration Guideline Level (DCGL). Explanations of this derivation are provided in the QASP.

A3 QUALITY OBJECTIVES AND CRITERIA

The quality objectives for this project are to collect samples and field information that are technically sound and properly documented and to validate and report data that are statistically valid and of known precision and accuracy.

The DQO process is a systematic approach for defining the criteria that the data collection design should satisfy. The DQO process was developed using the seven-step process set out in the

Guidance for the Data Quality Objective Process, EPA QA/R5. The DQOs for this project are presented in Table A-2.

A4 SPECIAL TRAINING AND CERTIFICATION

START-3 personnel are provided with training that ensures that technical, operational, and quality requirements are understood and met. In addition, a vigorous ongoing professional development program is maintained to strengthen staff skills, to provide career development, and to maintain staff retention. START-3 project staff receives training that includes, but is not limited, to the following:

- Logbook Training - Logbook training for the maintenance of field equipment and personal logbooks is presented to all employees upon initial employment and as refresher training to ensure accurate and appropriate project documentation.
- Health and Safety Training - Health and safety training will be provided to ensure compliance with Occupational Safety and Health Administration (OSHA), as established in 29 CFR 1910.120. This training includes, but is not limited to, 40-hour OSHA HAZWOPER training for new employees, 8-hour annual refresher OSHA training, 8-hour supervisor training, cardiopulmonary resuscitation (CPR), first-aid training, blood-borne pathogens training, and hazardous materials shipping training.
- Certifications - Team members are encouraged to attain and maintain certifications required for conducting work within the START-3 Scope of Work (SOW).
- Radiation Training – Team members will be given specific training on ionizing radiation, radiation safety, and the use of radiation field instruments.
- Conflict of Interest, Ethics, and Confidential Business Information Training - Team members will participate in refresher training on reporting conflicts of interest and maintaining confidentiality of project information.

All certificates and/or documentation that record completion of training will be maintained in START-3 personnel files.

A5 DOCUMENTATION AND RECORDS

It is the responsibility of the START-3 QAO to ensure the appropriate project personnel have the most current version of the QAPP, including all updates. As updates are made, the appropriate number of controlled copies will be distributed to the persons listed on the Distribution List who will in turn distribute copies to the appropriate field personnel.

Overall project records will include the following: the Project QAPP, Standard Operating Procedures (SOPs), and distribution lists for these documents; and copies of general in-house records (such as any site-specific instrument calibration and preventive maintenance logs, performance evaluation results [if any]; audit reports; and purchasing records and documentation). The project team will also organize project-specific records in the site file, and maintain these as per START-3 management system which is designed to collect, maintain, and retrieve records. Project data and information will be tracked and managed from inception to the final storage area.

The following documents provide the START-3 project team with directions for implementing and fulfilling QA requirements for this project and are incorporated by reference as part of this QAPP:

- Quality Assurance Management Plan (QMP) - The START-3 Contract No. EP-W-06-042 QMP provides overall corporate policy statements, procedures, and responsibilities to implement quality throughout the corporation.
- Compendium of Environmental Response Team (ERT) Standard Operating Procedures - SOPs provide a uniform approach to sampling, equipment use, and analytical procedures that will be consistently employed by START-3 personnel.

Documents and records related to field operations that will be managed include, but are not limited to, the following:

- Work Plan including the Sampling and Analysis Plan (SAP) (which includes this QAPP and a QASP), and the Health and Safety Plan (HASP).
- Sample Collection Records (logbooks, field notes, data collection sheets, COC records, custody seals, sample tags, phone conversation records, airbills, and corrective action reports).
- Project Data Assessment Records (field sampling audit checklists, Performance Evaluation [PE] samples results, data validation reports, phone conversation records, and corrective action reports).

Logbooks are issued for all field and data collection projects and assignments. All logbooks are currently tracked by the PTL. The logbooks become part of the site file when the project is closed out and are stored with the completed site files.

Logbooks may be assigned to each piece of equipment such as air monitoring instruments and field screening instruments for recording calibration information and are treated similar to field logbooks. The START-3 Project Team Leader will manage all calibration records.

The QAO will maintain an audit filing system with the contents organized into categories that are event-specific (i.e., logbook) and task-specific (i.e., administrative, health and safety, and field audits). Each file should contain items as they pertain to a specific audit event, including dated checklists that were used to execute the audit; a copy of the audit report; verification and acknowledgment of corrective action, if any; and the QAO audit closure statement.

All electronic files of documentation are stored on a secure server and backed up as outlined in Weston's QMP.

A5.1 Data Handling Records

Data handling records document protocols used in data reduction, verification, and validation. Data verification ensures the accuracy of the data transcription and calculation, if necessary, by checking a set of computer calculations manually. Data validation ensures that QC criteria have been met and data are appropriately qualified. Data validation reports will be available in hard copy and electronically in PDF format.

A5.2 Field Records/Data Reporting Archiving and Retrieval

Documents and records generated as part of this project will be maintained by START-3 in document archives for the remaining period of the START-3 contract. At the termination of the START-3 contract, WESTON will transfer the document files to the EPA archives as directed by EPA Region 6.

Table A-1
Key Personnel and Responsibilities

ORGANIZATION	NAME (TITLE)	RESPONSIBILITIES
EPA Region 6	Warren Zehner and Jon Rinehart Task Order Managers	Primary Contact for the project and responsible for all activities performed for the project, including management of START-3 and other contracts.
START-3	David Bordelon Project Manager	Responsible for all activities performed by START-3 including coordinating project activities with the START-3 Project Team Leader (PTL), preparing and reviewing reports and correspondence submitted to EPA, and attending project meetings.
	Robert Sherman Project Team Leader	Responsible for directing activities performed by START-3 and assumes total control over project activities. Specific responsibilities include communicating with the EPA, coordinating activities with appropriate support personnel, implementing health and safety criteria, preparing and reviewing reports and correspondence submitted to EPA, and attending project meetings.
	Jan Cristner P.E. Quality Assurance Officer	Responsible for reviewing project plans, submittals, and documents produced by START-3. Specifically, she will ensure START-3 submittals, plans, and documents comply with industry and START-3 standards; conduct audits; and prepare corrective action memorandums. The QAO is responsible for making sure project personnel have initial QAPP training and follow-up training as needed.
	Bob Schoenfelder, CHP Project Health Physicist	Responsible for development and implementation of QAPP and assurance that all data generated are of known quality to support ordered decisions.

Table A-2
Data Quality Objectives

STEP 1. STATE THE PROBLEM	
Historical underground mining operations contributed waste (uranium and other metals/radionuclides) to the surface in the area of the Section 35 and 36 (Cliffside) Mines.	
STEP 2. IDENTIFY THE DECISION	
Is the Total Effective Dose Equivalent (TEDE) greater than 12 mRem/yr for people living or working on the site?	
IDENTIFY THE ALTERNATIVE ACTIONS THAT MAY BE TAKEN BASED ON THE DECISIONS.	<ul style="list-style-type: none"> • If the TEDE is greater than 12 mrem/yr within an area on the site, a removal action will be implemented. • If the TEDE is less than 12 mrem/yr but some small areas of elevated radioactivity are present, a removal action may be conducted to reduce risk. • If the TEDE is less than 12 mrem/yr and no areas of elevated radioactivity are present, a No Further Action Required decision will be applied.
STEP 3. IDENTIFY INPUTS TO THE DECISION	
IDENTIFY THE INFORMATIONAL INPUTS NEEDED TO RESOLVE A DECISION.	<ul style="list-style-type: none"> • Calculate the TEDE on the site using the site-specific Protocol (Protocol) provided as an attachment to the QASP. • Identify the background TEDE.
IDENTIFY THE SOURCES FOR EACH INFORMATIONAL INPUT AND LIST THE INPUTS THAT ARE OBTAINED THROUGH ENVIRONMENTAL MEASUREMENTS.	<ul style="list-style-type: none"> • Measure gamma radiation directly above the ground surface according to procedures outlined in the Protocol. • Collect soil samples and measure the radionuclide activity (in picoCuries per gram). • Determine the projected land use for the site.
BASIS FOR THE CONTAMINANT-SPECIFIC ACTION LEVELS.	The TEDE of 12 mRem/yr is from an increased cancer risk as stated in OSWER 9200-4-18.
IDENTIFY POTENTIAL SAMPLING TECHNIQUES AND APPROPRIATE ANALYTICAL METHODS.	<ul style="list-style-type: none"> • Dynamic and stationary gamma surveys as described in the project QASP. • Collect surface and subsurface soil samples as described in the project QASP. The samples will be analyzed by gamma spectroscopy as described in the project QASP.
STEP 4. DEFINE THE BOUNDARIES OF THE STUDY	
DEFINE THE DOMAIN OR GEOGRAPHIC AREA WITHIN WHICH ALL DECISIONS MUST APPLY.	The Section 35 and 36 (Cliffside) Mines as well as areas downgradient in Section 2.
SPECIFY THE CHARACTERISTICS THAT DEFINE THE POPULATION OF INTEREST.	The area was affected by uranium mining activities at the Section 35 and 36 (Cliffside) Mines. Populations of interest are ranchers, hikers, hunters, and other recreational users.

Table A-2
Data Quality Objectives
(Continued)

STEP 4. DEFINE THE BOUNDARIES OF THE STUDY (CONTINUED)	
DEFINE THE SCALE OF DECISION MAKING.	Results of the gamma scanning and soil analytical results will be used to determine areas that require a Non-Time-Critical Removal Action.
DETERMINE THE TIME FRAME TO WHICH THE DATA APPLY.	The data will apply until there is a change in regulations regarding radiation exposure or until a removal action alters the TEDE.
DETERMINE WHEN TO COLLECT DATA.	Gamma radiation scanning and soil sample collection will take place beginning in July 2015.
IDENTIFY PRACTICAL CONSTRAINTS ON DATA COLLECTION.	<ul style="list-style-type: none"> • Inclement weather. • Access not attainable. • Surface conditions preventing subsurface sample collection.
STEP 5. DEVELOP A DECISION RULE	
SPECIFY THE PARAMETER THAT CHARACTERIZES THE POPULATION OF INTEREST.	The measured gamma radiation readings and soil sample analytical results at each location will be compared to the site-specific action levels.
SPECIFY THE ACTION LEVEL FOR THE DECISION.	<ul style="list-style-type: none"> • The Action Level for TEDE is 12 mRem/yr. • A DCGL will be calculated to determine a specific soil action level.
DEVELOP A DECISION RULE.	If the TEDE in an area exceeds 12 mrem/yr, or if the DCGL is exceeded, that area will be eligible for a removal action.
STEP 6. SPECIFY LIMITS ON DECISION ERRORS	
DETERMINE THE POSSIBLE RANGE OF THE PARAMETER OF INTEREST.	Activity and exposure rates can range from background concentrations to more than the DCGLs. Readings are not expected to be greater than 100 mR/hr or 1,000,000 counts per minute (cpm).

Table A-2
Data Quality Objectives
(Continued)

STEP 6. SPECIFY LIMITS ON DECISION ERRORS (CONTINUED)	
DEFINE BOTH TYPES OF DECISION ERRORS AND IDENTIFY THE POTENTIAL CONSEQUENCES OF EACH.	<p><u>Type I Error:</u> Deciding that the specified area represented by the field reading or sample does not exceed the site-specific action level when, in truth, the concentration of the contaminant exceeds its site-specific action level. The consequence of this decision error is that contaminated soil or building materials will remain in place, possibly endangering human health and the environment. This decision error is more severe.</p> <p><u>Type II Error:</u> Deciding that the specified area represented by the field reading or sample does exceed the site-specific action level when, in truth, it does not. The consequences of this decision error are that remediation of the specified area will continue and unnecessary costs will be incurred.</p>
ESTABLISH THE TRUE STATE OF NATURE FOR EACH DECISION RULE.	<p>The true state of nature when the soils are decided to be below the site-specific action levels when in fact, they are not below the specified assessment levels, is that the area does need remedial action.</p> <p>The true state of nature when the soils are decided to be above the site-specific action levels when in fact, they are not above the site-specific-action levels, is that the area does not need remedial action.</p>
DEFINE THE TRUE STATE OF NATURE FOR THE MORE SEVERE DECISION ERROR AS THE BASELINE CONDITION OR THE NULL HYPOTHESIS (H_0) AND DEFINE THE TRUE STATE FOR THE LESS SEVERE DECISION ERROR AS THE ALTERNATIVE HYPOTHESIS (H_a).	<p>H_0: The material represented by the field reading or sample of the specified area is above the site-specific action level.</p> <p>H_a: The material represented by the field reading or sample of the specified area is below the site-specific action level.</p>
ASSIGN THE TERMS “FALSE POSITIVE” AND “FALSE NEGATIVE” TO THE PROPER DECISION ERRORS.	<ul style="list-style-type: none"> False Positive Error = Type I False Negative Error = Type II
ASSIGN PROBABILITY VALUES TO POINTS ABOVE AND BELOW THE ACTION LEVEL THAT REFLECT THE ACCEPTABLE PROBABILITY FOR THE OCCURRENCES OF DECISION ERRORS.	To be assigned based on discussions with EPA Task Order Manager(s).

Table A-2
Data Quality Objectives
(Continued)

STEP 7. OPTIMIZE THE DESIGN	
REVIEW THE DQOs.	Due to insufficient historical data, determination of the standard deviation was not possible. Therefore, sample size calculation using the traditional statistical formula may not be the optimal design. To select the optimal sampling program that satisfies the DQOs and is the most resource effective, other elements were considered.
DEVELOP GENERAL SAMPLING AND ANALYSIS DESIGN. <ul style="list-style-type: none"> • Gamma screening will be conducted using 2x2 NaI detectors in systematic patterns to screen. • Background soil samples will be collected from undisturbed areas defined by the TOMs and WESTON's CHP. • Analytical testing will be conducted in a field laboratory using an MCA to measure radionuclide activity. • 10% of samples analyzed in the field laboratory will be submitted to a commercial laboratory for confirmation analysis. • Surface and subsurface soil samples will be collected from both contaminated and uncontaminated areas. 	

B DATA GENERATION AND ACQUISITION

Section B addresses the activities performed to acquire data. The subsections of this part discuss sampling design, sampling methodology, sampling documentation, analytical testing, quality control, and data management.

B1 SAMPLING PROCESS DESIGN

This section of the QAPP describes the sampling system in terms of what media will be sampled, where the samples and the number of samples will be taken, and sampling design rationale. The QASP provides specific methodologies and instructions to the field teams regarding sample collection and analysis. The QASP is provided as Appendix B to the Sampling and Analysis Plan (SAP). Any modifications to the project QASP and the reason for the modification will be documented in writing to the EPA TOMs.

B2 NONDIRECT MEASUREMENTS

Data from non-direct measurements as described in *Guidance from Quality Assurance Project Plans, EPA QA/G-5* (EPA, 2002a), include, but are not limited to existing sampling and analytical data and information from published literature. The site background portion of the Task Order Work Plan summarizes this existing information that was used to develop the current project plan. These include an Assessment completed by Rio Algom, a potentially responsible party (PRP), and by the EPA Airborne Spectral Photometric Environmental Collection Technology (ASPECT) airplane. These studies identified areas of concern, including down-gradient areas potentially impacted by surface water runoff. The current project EE/CA activities were designed based on the findings of these assessments,

B3 DIRECT READING INSTRUMENTS

Gamma radiation data will be collected from direct-reading instruments using a 2x2 sodium iodide (NaI) detector. START-3 will perform calibration checks using radioactive check sources on the instruments at the beginning of the day and at the end of the day. Instruments that do not

measure within the specifications established by the Project Health Physicist will be removed from service until they can be repaired.

B4 SAMPLING METHODS

This section addresses the field sampling methods to be followed. The project QASP discusses the types of samples to be collected. START-3 will use dedicated and non-dedicated sampling equipment to collect field samples. Dedicated equipment will be disposed after sampling. All non-dedicated equipment involved in field sampling activities will be decontaminated prior to and subsequent to sampling. Decontamination of sampling equipment will be kept to a minimum in the field and, wherever possible, dedicated sampling equipment will be used. Decontamination will be accomplished using procedures detailed in the project SAP and HASP.

Surface soil samples will be collected using dedicated disposable plastic scoops, and subsurface soils will be collected using a Geoprobe® or, alternately, using slam bar sampling methods. Soil samples that are collected via Geoprobe® and slam bar will come in contact with a disposable acetate sleeve.

B4.1 Sample Containers

The soil samples collected as part of this project will be placed in certified clean glassware and/or Marinelli jars. Each box of certified clean glassware includes a certificate documenting cleanliness. The certificates for each bottle lot will be collected and maintained in the site file. Sample labels displaying the sample number will be affixed to sample containers. After sampling, each container will be sealed with a custody seal, and a sample tag will be attached to each container.

B4.2 Sample Volumes, Container Types, Preservation Requirements, and Hold Times

Approximately one half liter of soil will be required for each analysis. The soil sample will be placed in a resealable plastic bag. The samples will be dried, sieved, milled, and placed in sealed Marinelli jars. Soil samples do not need chemical preservation nor do they need to be put on ice. There are no hold times associated with the soil samples for gamma spectroscopy analysis.

B5 SAMPLE HANDLING AND CUSTODY

Information regarding field and laboratory sample handling and custody procedures are discussed in the following subsections.

B5.1 Field Sample Handling and Custody

Sample custody is maintained when a sample is in a secure area or in view of, or under the control of, a particular individual. Personnel responsible for maintaining sample custody will be identified in the project SAP.

Chain-of-custody records will be prepared to accompany samples from the time of collection and throughout the shipping and analytical process. Each individual in possession of the samples will sign and date the sample chain-of-custody document. The field chain-of-custody record will be considered completed upon receipt at the laboratory.

A chain-of-custody record will be maintained from the time the sample is taken to its final deposition. Every transfer of custody must be noted and signed for, and a copy of this record kept in the site file. When samples (or groups of samples) are not under direct control of the individual responsible for them, they must be stored in a locked container sealed with a custody seal. Specific information regarding custody of the samples projected to be collected on the weekend will be noted in the field logbook.

B5.2 Laboratory Sample Handling and Custody

At the laboratory, the person responsible for receiving the sample cooler will sign and date the chain-of-custody form; verify that custody seals are intact on shipping containers and sample bottles; and compare samples received against those listed on the chain-of-custody form and sample tags. The laboratory will maintain internal chain-of-custody documentation and sample receipt documents, and place the samples in the appropriate laboratory storage.

B6 ANALYTICAL METHODS

Soil samples will be analyzed for radium-226 (Ra-226) using gamma spectroscopy using a Multi-Channel Analyzer (MCA) at the field laboratory. START-3 will place the samples into

sealed jars and wait for a 21-day grown-in period before analyzing. Soil samples custody sealed and stored within a locked building during the grown-in period. The grown-in period will allow the Ra-226 to equilibrate with bismuth-214 (Bi-214). The MCA will analyze Bi-214.

B7 QUALITY CONTROL REQUIREMENTS

The following subsections identify the typical QC procedures required for field sampling and for the analytical methods described later in this section of this document.

B7.1 Field MCA QC Procedures

START-3 will use the MCA to analyze a blank and two standards at the beginning and end of each day the instrument is utilized. Additionally, every 10th sample run will be analyzed twice. If the blank, standards, or duplicates are not within two sigma of the proper value designated within the MCA field operating procedure document, the Project Health Physicist will be consulted to investigate the deviance. START-3 will cease all MCA analysis until the deviance is corrected and all QA/QC requirements are met.

B7.2 Off-site Laboratory Analysis

Ten percent of the samples collected and analyzed with the MCA in the field office will be sent to an off-site radiological laboratory for confirmation analyses.

B7.3 Non-Dedicated Equipment

Whenever possible, dedicated sampling equipment will be used and discarded after a single sample is collected. When non-dedicated equipment is used, it will be decontaminated between samples. Decontamination will be verified by scanning the equipment with a pancake probe radiation detector.

B7.4 Sample Duplicates

Environmental duplicates are collected to demonstrate the reproducibility of overall sampling and analysis technique and the variability of the sample matrix. The blind field duplicate

analysis is separate from the laboratory duplicate analysis. At a minimum, one blind field duplicate sample pair will be collected per each matrix at a frequency of one per 10 samples.

B8 BACKGROUND SAMPLES

In order to assess any potential contamination on the site, background samples must be collected. Twenty background samples will be collected to provide statistical significance. The background samples will be collected from an area with similar geology, as close to the site as practical, and at a location that is as undisturbed as possible.

B9 NON-DIRECT MEASUREMENTS

Previously collected data and other information that will be used to make project decisions will be assessed to determine the limitations of the acquired data. Secondary sources of acquired data and information include, but are not limited to, the following:

- Historical data (e.g., from organization's/facility's corporate records and/or federal/state or local records pertaining to previous monitoring events, site assessments, investigations, etc.).
- Background information/data from organization's/facility's corporate records and/or federal/state/local records pertaining to site-specific industrial processes, process by-products, past and current chemical uses, raw material and finished product testing, waste testing and disposal practices, and potential chemical breakdown products.
- Data generated to verify innovative technologies and methods.
- Data generated from computer databases (such as manufacturers' process/product information, waste management, or effluent information).
- Environmental indicator data obtained from federal/state/local records.
- Computer models or algorithms.
- Literature files/searches.
- Publications.
- Photographs.
- Topographical maps.

If known, all QC procedures, checks and samples that were analyzed with the data set will be listed. The method and/or laboratory-specific QC acceptance criteria used for data generation

and whether the data was verified and validated will be noted. If data were verified and/or validated, then the criteria and procedures used will be listed.

B10 DATA MANAGEMENT

Data management is the system by which data is reduced, reviewed, validated, reported, distributed, and archived. This system is designed to meet the QA objectives for this project. As part of the START-3 data management requirements, all documents will be completed legibly in ink as well as by entry into field logbooks, Response Manager, or SCRIBE. Response Manager is the Enterprise Data Collection System designed to provide near real-time access to data normally collected in logbooks. Response Manager provides a standard data collection interface for modules of data normally collected by START-3 field personnel while on-site. These modules fall into two basic categories for response and removal. The modules include Emergency Response, Reconnaissance, Facility Assessment, Shipping, Container, Materials, Calls, Household Hazardous Waste (HHW), and General/Site-Specific Data. The system provides users with a standard template for laptop/desktop/tablet PCs that will synchronize to the secure web interface using merge replication technology to provide access to collected data via the RRC-EDMS EPA Web Hub. Response Manager also includes an integrated GPS unit with the secure PDA application, and the coordinates collected in Response Manager are automatically mapped on the RRC-EDMS interactive mapping site. GIS personnel can access this data to provide comprehensive site maps for decision making support.

Response Manager also includes an analytical module that is designed to give SCRIBE users the ability to synchronize the SCRIBE field data to the RRC-EDMS Web Hub. This allows analytical data managers and data validators access to data to perform reviews from anywhere with an available Internet connection. The analytical module is designed to take the analytical data management functionality of the EPA SCRIBE software and make it available for multiple users to access on one site. Response Manager also supports EPA standards such as ANSETS and SEDD and will allow users to connect to the database using the SCRIBE desktop interface, thus providing normal SCRIBE desktop-like functionality for multiple users.

All electronic files are stored on a secure server and backed up regularly.

B10.1 Field Documentation

The following field documentation will be maintained as described below.

Field Logbook

The field logbook is a descriptive notebook detailing site activities and observations so that an accurate, factual account of field procedures may be reconstructed. Each individual will sign any entry he/she makes. Entries will include, at a minimum, the following:

- Site name and project number.
- Names of on-site personnel.
- Dates and times of all entries.
- Description of all site activities, including site entry and exit times.
- Noteworthy events and discussions.
- Weather conditions.
- Site observations.
- Identification and description of samples and locations.
- Global Positioning System (GPS) Latitude and Longitude coordinates for sample locations
- Subcontractor information and names of on-site personnel.
- Dates and times of sample collections and chain –of-custody information.
- Records of photographs.
- Site sketches.

Sample Labels

Sample labels will be securely affixed to the sample container. The labels will clearly identify the particular sample and will include the following information:

- Site name and project number.
- Date and time the sample was collected.
- Sampling location.
- Sample preservation method, if applicable.
- Analysis requested.

A chain of custody will be maintained from the time of sample collection until final deposition. Every transfer of custody will be noted and signed for and a copy each record will be kept by the signing individual.

Custody Seal

Custody seals demonstrate that a sample container has not been tampered with or opened. The individual who has custody of the samples will sign and date the seal and affix it to the container in such a manner that it cannot be opened without breaking the seal.

Photographic Documentation

START-3 team members will take photographs to document site conditions and activities as work progresses. Initial conditions should be well documented by photographing features that define the site-related contamination or special working conditions. Representative photographs should be taken of each type of site activity. The photographs should show typical operations and operating conditions as well as special situations and conditions that may arise during site activities. Site final conditions should also be documented as a record of how the site appeared at completion of the work.

All photographs should be taken with a camera capable of recording the date on the image. Each photograph will be recorded in Response Manager with the location of the photographer, direction the photograph was taken, the subject of the photograph, and its significance (i.e., why the picture was taken). Where appropriate, the photograph location, direction, and subject will also be shown on a site sketch and recorded within Response Manager.

B10.2 Data Storage/Retrieval

Storage and retrieval procedures for electronic and hardcopy data generated for the project will be approved by the START-3 Quality Assurance Officer (QAO). Data will be reviewed by the START-3 QAO or his/her designee before inclusion in any report, or before any critical site decisions are made. Project documents will be maintained by START-3 in the site file and may be retrieved upon request.

C ASSESSMENT AND OVERSIGHT

Part C provides guidance to assess the effectiveness of the project's implementation of QA/QC activities. This assessment will help verify the QAPP is being implemented as prescribed.

C1 ASSESSMENT AND RESPONSE ACTIONS

The following subsections describe the assessments and corresponding response actions for sampling activities.

C1.1 Audits and Surveillances

Audits shall be conducted periodically to assess conformance to the Work Plan and QAPP. Any changes and deviations from the QAPP during field activities will be documented in a memorandum addressed to the EPA TOM. Corrective action procedures will be implemented when deviations from the QAPP that could potentially impact data quality and/or usability are noted by project personnel outside the formal assessment process. Any such incidents will be documented and resolved using the procedures and personnel that were detailed for planned assessments.

Audits are of two specific types: (1) project audits and (2) field audits. These audits will be performed on an as-needed basis.

C1.1.1 Project Audits

Project audits will be conducted to evaluate the quality, completeness, and timeliness of individual project task assignments. All nonconformance issues will be brought to the attention of the Project Manager. These audits are conducted by the QAO or his/her trained representative. The audit reports and corrective actions are sent to the START-3 Project Manager and Project Team Leader.

C1.1.2 Field Audits

Field audits will be conducted to ensure START-3 field personnel are adhering to proper sampling, administrative, and health and safety SOPs. Field audit considerations should include sample documentation; sampling plan adherence; equipment operation, maintenance, and calibration; proper handling of standards, calibration gases, and preservatives; sampling techniques; decontamination; data management and review; sample custody; packing and shipment procedures; and health and safety practices. Field audits will be conducted by the QAO or PTL on a random basis and in response to reports or findings of poor performance or noncompliance with the QAPP, SOPs, or sound engineering practices. The associated reports and corrective actions are sent to the START-3 Project Manager and EPA TOM, as appropriate.

C1.2 Corrective Actions

Corrective actions are required whenever a deficiency or inadequacy in the field and/or in the laboratory operations is identified. Corrective action may be required due to malfunctioning equipment systems and instruments, or equipment systems and instruments that fail calibration or generate data that exceed stated acceptance limits. Nonconformances to SOPs and site-specific QAPPs will also result in corrective action if they have a negative impact on data quality, usability, or established detection limits. It is the responsibility of the START-3 Project Manager to assure that corrective action be initiated as soon as possible. Nonconformance and corrective actions will be documented in the site file memorandum with correspondence to the QAO and the appropriate START-3 personnel if equipment malfunction is observed.

C2 REPORTS TO MANAGEMENT

In order to ensure that corporate and project management is periodically updated on the project status and results of QA assessments, QA Management reports will be prepared by the START-3 QAO, as needed. Project management shall be updated with any modifications to the QAPP.

C3 FINAL REPORT

The final report will be prepared to summarize the project RSA and EE/CA project activities and objectives. The final report will include the following information:

- Project quality objectives, narrative, and time line of project activities.
- Summary of field activities conducted.
- Data summary including tables, charts, graphs.
- Data gaps, assessment results, engineering evaluations, and cost analyses.

D DATA VALIDATION AND USABILITY

Analytical data will be generated by the START-3 field laboratory and the off-site commercial analytical laboratory. START-3 will validate the radioanalytical data of both the field laboratory and the off-site commercial laboratory by having each data set reviewed by a professional health physicist. A summary of the data validation and findings will be presented in the Site Summary Report as part of the final report. START-3 will evaluate the following to verify that the radioanalytical data are within acceptable QA/QC tolerances:

- The completeness of the Laboratory Reports, verifying that all required components of the report are present and that the samples indicated on the accompanying chain-of-custody are addressed in the report.
- The results of laboratory blank analyses.
- Compound identification and quantification accuracy relative to expected isotopic ratios for uranium and its decay products.
- Laboratory precision, through review of the results for the blanks, standards, and blind field duplicates.

Variances from the QA/QC objectives will be addressed as part of the Data Validation Summary Reports.

APPENDIX B

QUALITY ASSURANCE SAMPLING PLAN (QASP)

APPENDIX B

QUALITY ASSURANCE SAMPLING PLAN

FOR THE

NON-TIME-CRITICAL REMOVAL SUPPORT WORK PLAN

TRONOX NAVAJO AREA URANIUM MINES

SECTIONS 35/36 (CLIFFSIDE) MINES

MCKINLEY COUNTY, NEW MEXICO

Prepared for

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1. INTRODUCTION

Weston Solutions, Inc. (WESTON®), the Superfund Technical Assessment and Response Team (START-3) contractor, has been tasked by the U.S. Environmental Protection Agency (EPA) Region 6 under Contract No. EP-W-06-042, Task Order (TO) Number 0041 to conduct a Removal Site Assessment (RSA) and an Engineering Evaluation/Cost Analysis (EE/CA) as part of the Non-Time-Critical Removal Support (NTCRS) at the Sections 35/36 (Cliffside) Mines (Site) located in McKinley County, New Mexico. The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) number assigned to the Site is NMN000607481.

START-3 has prepared this Quality Assurance Sampling Plan (QASP) to describe the technical scope of work (SOW) to be completed as part of the NTCRS. Only the RSA activities, however, as outlined in Work Breakdown Structures (WSBs) 3-8 of the NTCRS Work Plan, are being addressed currently in this document. The QASP will be amended at a later date to include all EE/CA activities (WBSs 3, 5-12 of the NTCRS Work Plan) prior to their initiation. A document outlining the protocols, to determine the applicable radiological threat abatement action criteria for abandoned uranium mine (AUM) sites on this project, has been developed and provided as Appendix A. This QASP is a dynamic document that may be amended as required by site conditions.

START-3 is responsible for the oversight and ultimate implementation of this QASP. START-3 and any other contractors involved in the implementation of this QASP will furnish the personnel, materials, equipment, services, and facilities necessary to perform the NTCRS activities. The oversight agency for these activities is EPA Region 6.

1.1 PROJECT OBJECTIVES

START-3 is providing technical assistance to EPA Region 6 for the performance of the NTCRS and will collect the data necessary to support the EPA determination of whether or not the site presents a threat to public health or welfare of the United States or the environment in accordance with *40 Code of Federal Regulations (CFR) 300.415*. The objectives of the RSA are to take readings using direct-reading radiation instruments and to collect soil samples to

determine if identified site-related contaminants are present on the properties sampled. The objectives will be achieved by evaluating field and laboratory analytical results obtained during field activities. Direct reading instruments and soil samples are to be used to ascertain Radium-226 concentrations for comparison to a risk-based action level of 3×10^{-4} , which is established by EPA to be comparable to a dose of 12 millirem per year (mrem/yr) above background.

1.2 PROJECT TEAM

The Project Manager, David Bordelon, will be responsible for the overall management of the project. The Project Team Leader, Robert Sherman, will be responsible for implementing field activities as described in the Task Order Work Plan. The Project Health Physicist, Robert Schoenfelder, Certified Health Physicist (CHP) will ensure that data generated are of known quality sufficient to support the intended decisions and that the quality of the data is communicated to the project decision-makers. The Quality Assurance Officer (QAO), Ms. Jan Cristner, P.E., is responsible for implementing project quality procedures for all site activities. The Field Health Physicist and Field Safety Officer (FSO), Sam Cheek, will manage the field laboratory.

The PTL will be responsible for the technical quality of work performed in the field during the site activities and will serve as the START-3 liaison to EPA Region 6 in the field. The PTL, with the concurrence of EPA, will direct START-3 in conducting work in accordance with the Work Plan. The Certified Health Physicist (CHP) will work remotely and will consult with on-site staff as needed. The START-3 FSO will be responsible for providing overall site health and safety support.

1.3 QASP FORMAT

This QASP has been organized in a format that is intended to facilitate and effectively meet the objective of the removal assessment. The QASP is organized as follows:

- Section 1 – Introduction
- Section 2 – Site Background
- Section 3 – Sampling Approach and Procedures
- Section 4 – Analytical Methods

- Section 5 – Data Validation
- Section 6 – Quality Assurance

Figures are provided as separate portable document format (pdf) files. Appendices include the following information:

- Appendix A Protocol for Assessment of Tronox Abandoned Uranium Mine Sites
- Appendix B EPA ERT and WESTON Standard Operating Procedures

2. SITE BACKGROUND

Information regarding the site location, description, and site history are included in the following subsections.

2.1 SITE LOCATION AND DESCRIPTION

The Region 6 Tronox NAUM Area comprises approximately 100 square miles within the Ambrosia Lake Sub-District (ALSD) in McKinley County, New Mexico. The ALSA is located within the Grants Mining District (GMD), which is an area of uranium mineralization occurrence approximately 100 miles long and 25 miles wide encompassing portions of McKinley, Cibola, Sandoval, and Bernalillo counties of New Mexico. Main access into the Region 6 Tronox NAUM Area is provided via New Mexico State Roads 605 and 509 (Figure 2-1). The Site is located in the ALSA, McKinley County, New Mexico approximately 25 miles northwest of Grants, and 3.5 miles northwest of the intersection of New Mexico State Highways 509 and 605. It is composed of two former underground uranium mines that are located in Sections 35 and 36, T14N, R9W that have been identified as eligible for abatement activities subject to the Tronox NAUM settlement.

For the purposes of the NTCRS, the Site boundary will be defined by the extent of contamination that can be directly linked to the mine waste sources associated with the Section 35 Mine and the Section 36 Mine through contiguous surface contamination or other methods and in consultation with the EPA Federal On-scene Coordinator FOSC(s) (Task Order Manager(s) [TOM]).

2.2 SITE HISTORY

In April 2014, the United States (U.S.) and the Anadarko Litigation Trust (“Litigation Trust”) entered into a proposed settlement agreement with Anadarko Petroleum Corporation and some of its affiliates. The settlement was approved by the U.S. District Court in January 2015, and the U.S. Environmental Protection Agency (EPA) is expected to receive funding from the Litigation Trust for the assessment and subsequent cleanup of over 50 Tronox Navajo Area Abandoned Uranium Mines (Tronox NAUM) sites located in both an EPA Region 6 jurisdictional area and an EPA Region 9 jurisdictional area.

A detailed site history is included in the Task Order Work Plan and Sampling and Analysis Plan.

3. SAMPLING APPROACH AND PROCEDURES

This section addresses sampling and scanning activities to be conducted during the RSA. This section will be amended to include the EE/CA sampling and other data acquisition activities at a later date, prior to their initiation. The scanning and sampling procedures for the RSA will be consistent with the protocols developed by EPA Region 6, provided as Appendix A of this QASP. The specific field investigation activities that will be conducted during site sampling are presented in the following subsections. Sampling procedures and sample locations are also included.

3.1 OVERVIEW OF SCANNING/ SAMPLING ACTIVITIES

The RSA approach will consist of scanning for gamma radiation using direct-reading instruments and collecting samples of soil and other miscellaneous media for laboratory gamma spectroscopic analysis.

The primary areas of concern will be the areas that are shown to have elevated readings on the ASPECT aerial survey (Figure 3-1). Direct gamma scans will be conducted over the area using hand-held instruments mounted on a Utility Terrain Vehicle (UTV), on a baby buggy, or a backpack. The gamma scans will cover a percentage of the surface sufficient to determine which areas are above the Derived Concentrated Guideline Level (DCGL) (see Section 3.2.1). Additional one-minute stationary scaler readings will be made at set locations. Soil samples will be collected for laboratory analysis. The soil samples will be dried, homogenized, sieved, and analyzed in a field analytical laboratory using a Multi-Channel Analyzer (MCA). Ten percent of the soil samples will be sent to an off-site analytical laboratory to confirm the field laboratory results.

Sample data management will be conducted using EPA Scribe Environmental Sampling Data Management System (SCRIBE) software.

3.1.1 Data Quality Objectives

The objective of the sampling activities described in this QASP is to delineate the contaminants of concern within the assessment areas. To accomplish this, data quality objectives (DQOs) have

been established using the seven-step process set out in the *Guidance for Quality Assurance Project Plans EPA QA/G5*. The DQOs can be found in the Quality Assurance Project Plan (QAPP), provided as Appendix A of the Sampling and Analysis Plan (SAP).

3.1.2 Field Activities Review Meeting

Prior to mobilizing to the site, the START-3 PTL will conduct a meeting via conference call with the entire field team to familiarize the team with the project scope of work, to discuss the planned field activities and roles and responsibilities, and to review the project Health and Safety Plan (HASP) and other relevant START-3 and EPA operating procedures. This meeting will be conducted prior to any site activities. The field team will also be briefed on the project budget and expense reporting responsibilities.

3.1.3 Health and Safety Implementation

The RSA field activities will be conducted in accordance with the site-specific Health and Safety Plan (HASP). START-3 will conduct all site activities in Level D personal protective equipment (PPE) as stated in the site HASP. The FSO will be responsible for implementation of the HASP during the removal assessment activities. In accordance with the START-3 general health and safety operating procedures, START-3 personnel will drive the route to the hospital (site-specified in the HASP) prior to initiating sampling activities.

3.1.4 Mobilization and Field Office Establishment

The START-3 field team will mobilize the equipment required for the removal assessment from the WESTON Regional Equipment Store (RES) warehouses located in Houston and Dallas, Texas, as necessary. A field office will be located in the town of Grants, New Mexico to be used as a base of operations and to meet with the public. An additional field office/outreach center will be established at the intersection of NM Hwy 605 and NM Hwy 509.

3.1.5 Access to Properties

The US EPA will obtain access agreements before the START-3 field team conducts work at the site. Property owners include BHP Billiton and the State of New Mexico Land Office.

3.2 SAMPLING/MONITORING APPROACH

This project will address the radiological toxicity of uranium and its daughter elements. Sections 3.2.1 through 3.2.5 outline the screening and sampling procedures that will be used to investigate radiological contamination.

3.2.1 Calculating the DCGL

As outlined in the Protocol for Assessment of Tronox Abandoned Uranium Sites (Protocol) (Appendix A), the action levels for this project will be based on risk. The action level will be based on an excess cancer risk of 3×10^{-4} which represents a dose of 12 millirem per year (mrem/yr) above background.

The DCGL for soil for the Sections 35/36 (Cliffside) mines will be calculated using specific site conditions and future land use. It is anticipated that the future land use would be limited to hunting and grazing and that residential use of the property would be forbidden. Details on the derivation of DCGLs are provided in the Protocol document (Appendix A).

3.2.2 Defining Background

Before the assessment begins, background areas will be identified and measured. A background area is a non-impacted area representative of the properties to be assessed with similar physical, biological, chemical, and radiological characteristics against which readings at residential sites can be compared. Background areas will be selected by location, gamma radiation level, and geological formation. To establish a background area, START-3 will collect soil samples to be analyzed for Ra-226 and conduct stationary 1-minute gamma radiation count rate readings above each sample location using a 2-inch by 2-inch sodium iodide detector (2x2 NaI). For statistical modeling, a minimum of 20 samples and measurements will be collected for a background location. Background locations will be as close as practical to the areas to be assessed.

3.2.3 Surface Soil Scanning

START-3 will conduct both mobile and stationary gamma radiation scanning throughout the mine area. Most of the areas shown to be elevated during the ASPECT aerial survey has been

assessed and documented by the current mine operator. START-3 will conduct scanning (10-20% of the ground surface previously surveyed) to confirm the data gathered by the current mine operator, as well as scanning areas that have no known radiation survey data.

3.2.3.1 Mobile Gamma Radiation Scanning

START-3 will conduct gamma radiation scanning throughout the mine area using a 2x2 NaI detector in conjunction with a Global Positioning System (GPS) unit. START-3 will use a variety of tools to make the readings, including a detector mounted on a baby buggy, an array of detectors mounted to a UTV, and a detector being hand-carried with associated electronics in a backpack. The specific tool used will depend on the terrain, vegetation, and other factors. In all cases, the detector will be held 15 inches above the surface soil. The cart will be pushed on transects at approximately 1 to 3 feet per second. Debris, vegetation, structures, or other objects will not be moved, and the survey will be conducted around such obstacles.

In general, the purpose of the mobile gamma radiation screening is to determine which areas of the site will require remediation. If an area is shown to be contaminated above the DCGL and will require remediation, further scanning may not be needed. Most areas of the site with elevated readings on the ASPECT aerial survey were scanned by the current operator. START-3 will conduct confirmation scanning of 10-20% of the area scanned by the current operator. Based on the ASPECT aerial survey, the areas that were not scanned by the current operator are not expected to be contaminated above the DCGL.

The site will be divided into Class 1 areas, Class 2 areas, and Class 3 areas. Definitions of Class 1, 2, and 3 survey areas are provided in the Protocol document (Appendix A). The areas shown to be elevated in the ASPECT aerial survey will be Class 1 areas and Class 2 areas. These areas will be scanned with 10–20 % coverage. The areas that were not scanned by the current operator will be Class 3 areas and will receive 10 % coverage.

3.2.3.2 Stationary Gamma Radiation Screening

START-3 will conduct stationary gamma radiation screening throughout the mine area. Stationary gamma radiation measurements provide statistically significant data and can lower the

detection limits of the meter. The number and spacing of stationary gamma readings to be collected will be calculated according to Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) guidelines. Details of the calculations for the number of stationary readings are provided in Sections 3.3 and 3.4 of Appendix 3 of the Protocol document. The stationary readings will be made for 1 minute with the 2x2 NaI detector 15 inches above ground level. The locations of the 1-minute readings will be documented using the GPS unit.

3.2.4 Soil Sampling

Soil samples will be collected to provide laboratory verification of field gamma scan readings. In Class 2 and 3 areas, soil samples will be collected according to MARSSIM guidelines to verify that no remediation is needed. In Class 1 areas, very few soil samples will be collected as these areas by definition will be eligible for removal actions. After the removal action, soil samples will be collected to satisfy MARSSIM guidelines.

The soil samples will be collected from the top 6 inches of soil in Class 2 and 3 areas. In Class 1 areas depth samples will be collected as needed to determine the depth of the contamination.

The soil samples will be collected in general accordance with EPA/Emergency Response Team (ERT) Standard Operating Procedures (SOPs) (Appendix B). Relevant observations and information will be recorded in the field logbook. Samples will be collected utilizing dedicated plastic scoops to reduce the potential for cross-contamination between intervals and locations. The samples will be placed into quart-size or larger plastic bags and then homogenized. Foreign material such as vegetation, large rocks and pebbles, etc. will be removed from the sample and placed back on the property.

Soil samples will be dried and sieved at the field offices. Samples will be analyzed for Radium-226 by gamma spectrometry using a Multi-Channel Analyzer (MCA) at the field offices. Ten percent of the analyzed samples will be sent to an off-site laboratory for confirmation analysis.

At the direction of EPA, soil sampling for chemical toxicity of uranium will not be conducted.

3.2.5 Radiological Data Interpretation

As noted previously, the site will be divided into Class 1 areas, Class 2 areas, and Class 3 areas. In general, Class 1 areas are contaminated such that the risk for workers would be above 3×10^{-4} and these areas are to be remediated during the Non-Time-Critical Removal Action. Class 2 and Class 3 areas would be not require remediation. START-3 will conduct the appropriate statistical tests described in the Protocol document (Appendix A) to verify that exposure in the Class 2 and Class 3 areas would not be above the acceptable risk. Calculations comparing the site data to the acceptable risk criterion will be reviewed by the project CHP.

3.2.6 Investigation-Derived Wastes

Attempts will be made to minimize investigation-derived waste (IDW) during this investigation by utilizing disposable sampling equipment. Any IDW generated will be handled in accordance with EPA Guidance Document EPA/540/G-91/009, OERR Directive 9345.3-02, Management of Investigation-Derived Wastes during Site Inspections.

After sampling, surface soil sample cuttings will be returned to the hole from which they were generated. START-3 anticipates generating minimal amounts of decontamination water since a majority of the sampling equipment used will be disposable. Disposable sampling equipment, acetate liners, and used PPE will be placed in marked 55-gallon drums and disposed of during the removal assessment operation.

3.2.7 Sampling and Sample Handling Procedures

Samples will be collected using equipment and procedures appropriate to the matrix, parameters, and sampling objectives. The volume of the sample collected must be sufficient to perform the analyses requested. Samples must be stored in the proper types of containers and preserved in a manner for the analyses to be performed.

All clean decontaminated sampling equipment and sample containers will be maintained in a clean, segregated area. All samples will be collected with clean decontaminated equipment. All samples collected for laboratory analysis will be placed directly into pre-cleaned, unused glass or plastic containers. Sampling personnel will change gloves between each sample

collection/handling. All samples will be assembled and catalogued prior to shipping to the designated laboratory.

Sampling preservation, containers, and hold times for analytical methods associated with this site are presented in Subsection 3.5.

3.2.8 Quality Assurance/Quality Control Samples

START-3 will collect field duplicate and MS/MSD samples of soil and prepare equipment rinsate blank samples as needed during the removal assessment sampling activities. QA/QC samples will be collected according to the following dictates:

- Blind field duplicate soil samples will be collected during sampling activities at locations selected by the START-3 PTL. The data obtained from these samples will be used to assist in the quality assurance of the sampling procedures and laboratory analytical data by allowing an evaluation of reproducibility of results. Efforts will be made to collect duplicate samples in locations where there is visual evidence of contamination or where contamination is suspected. Blind field duplicate samples will be collected at the rate of 1 duplicate for every 10 samples collected.
- MS/MSD soil samples will be collected during sampling activities at locations selected by the START-3 PTL. The data obtained from these samples will be used to assist in the quality assurance of the sampling procedures and laboratory analytical data by allowing an evaluation of reproducibility of results. Efforts will be made to collect MS/MSD samples in locations where there is visual evidence of contamination or where contamination is suspected. MS/MSD samples will be collected at the rate of one MS/MSD sample for every 20 samples collected.

3.3 SAMPLE MANAGEMENT

Specific nomenclature that will be used by START-3 will provide a consistent means of facilitating the sampling and overall data management for the project as defined in WESTON SOPs. Any deviations from the sample nomenclature proposed below must be approved by the EPA and the project DM. The nomenclature consists of the following format:

Project ID- Section -Sequential Sample Location - Sample Type+ QC Type – Date.

The Project ID is a unique identifier used to designate the particular physical location where the sample was collected. The section number is typically the mine number or the section number where the sample is located. The Sequential Sample Location is the sequential number of the

sample location at a given property (i.e., 01 is the first sample location taken at a property; 02 is the second sample location taken at a property). The Section ID and Sequential Sample Location make up the Location for SCRIBE use.

The Sample Type is a one-digit code used to designate what type of sample was collected as shown below:

1	Background
2	Ludlum “1 minute”
3	Laboratory Radiation “Hot Spot”
4	Open
5	Open
6	Open
7	Open
8	Open
9	Open

The QC Type is a one-digit code used to designate the QC type of the sample as shown below:

1	Normal
2	Duplicate
3	Rinsate Blank
4	Open
5	Open
6	Open

The date must be in the format YYMMDD.

Sequence is an additional parameter used to further differentiate samples (e.g., if two samples were taken from the same sample area on the same day).

Sample data management will be completed utilizing the EPA-provided SCRIBE software provided by EPA.

3.4 DECONTAMINATION

The nondisposable sampling equipment such as soil samplers and hand trowels used during the sample collection process will be thoroughly decontaminated before initial use, between use, and

at the end of the field investigation. Equipment decontamination will be completed in the following steps:

- Water spray or brush, if needed, to remove soil/sediment from the equipment.
- Nonphosphate detergent and potable water wash to clean the equipment.
- Final potable water rinse.
- Air-dried equipment.

Personnel decontamination procedures are described in the site-specific HASP. All decontamination activities will be conducted at a temporary decontamination pad that will be constructed in an area to be determined by the PTL prior to the beginning of field activities.

Excess soil and fluids generated as a result of equipment decontamination will be placed in a drum and staged in an area to be determined by the PTL. The drum will be labelled on the side with the name of the site, the contents, sampling location, and date.

3.5 SAMPLE PRESERVATION, CONTAINERS, AND HOLD TIMES

Soil samples will be collected in plastic jars of at least 16-ounce capacity. Once collected, samples will be dried, homogenized, and sieved. Samples designated for gamma spectrometry analysis do not require maintenance of a specific temperature range and do not have a holding time limit. Chain-of-custody forms will be completed for each sample shipment and sent with the samples to the designated laboratory by overnight carrier.

4. ANALYTICAL METHODS

START-3 will analyze soil samples by gamma spectroscopy in a field laboratory using a multi-channel analyzer (MCA). Ten percent of the samples will also be sent to an off-site analytical laboratory for verification analysis.

4.1 SAMPLE PREPARATION

Soil samples collected by START-3 will be prepared before analysis in the field laboratory. The samples will be dried, sieved, milled, and homogenized at the sample preparation area in the Field Office. The samples will be placed into Marinelli jars and sealed for analysis.

4.2 FIELD LABORATORY RADIOLOGICAL ANALYSIS

After soil samples have been prepared and placed in sealed Marinelli jars, they will be held for a minimum of 21 days to allow isotopes to “grow in” to equilibrium. After 21 days, the sealed Marinelli jar will be placed onto the 2x2 inch sodium iodide (NaI) detector and scanned by an MCA for 10 minutes. The MCA will measure the Bismuth-214 (Bi-214) peak. The Bi-214 will be in equilibrium with Ra-226 and will thus have equal activities.

4.3 OFF-SITE LABORATORY RADIOLOGICAL ANALYSIS

Ten percent of samples will be sent to a qualified off-site commercial laboratory for gamma spectroscopy analysis. The samples will be sent in sealed Marinelli jars, so that the laboratory will not have to prepare the sample or hold the sample for the 21-day grow-in time.

5. DATA VALIDATION

START-3 will validate the radioanalytical data by having each data set reviewed by a certified health physicist. A summary of the data validation and findings will be presented to a TOM in a Summary Report prior to submittal of the final report. START-3 will evaluate the following to verify that the radioanalytical data are within acceptable quality assurance/quality control (QA/QC) tolerances:

- The completeness of the Laboratory Reports, verifying that all required components of the report are present and that the samples indicated on the accompanying chain-of-custody are addressed in the report.
- The results of laboratory blank analyses.
- The results of laboratory control sample (LCS) analyses.
- The results of MS/MSD analyses.
- Compound identification and quantification accuracy relative to expected isotopic ratios for uranium and its decay products.
- Laboratory precision, through review of the results for blind field duplicates.

Variances from the QA/QC objectives will be addressed as part of the Data Validation Summary Reports.

6. QUALITY ASSURANCE

Quality assurance (QA) will be conducted in accordance with the WESTON Corporate Quality Management Manual, dated March 2014 and the EPA Quality Assurance/Quality Control Guidance for Removal Activities, dated April 1990. The START-3 QAO will be assigned and will monitor work conducted throughout the entire project including reviewing interim report deliverables and field audits. The START-3 PTL will be responsible for QA/QC of the field investigation activities. The designated off-site laboratory utilized during the investigation will be responsible for QA/QC related to the analytical work. START-3 will also collect blind, duplicate samples to verify that laboratory QA/QC is consistent with the required standards and to validate the laboratory data received.

6.1 SAMPLE CUSTODY PROCEDURES

Because of the evidentiary nature of sample collection, the possession of samples must be traceable from the time the samples are collected until they are introduced as evidence in legal proceedings. After sample collection and identification, samples will be maintained under chain-of-custody (COC) procedures. If the sample collected is to be split (laboratory QC), the sample will be allocated into similar sample containers. Sample labels completed with the same information as that on the original sample container will be attached to each of the split samples. All personnel required to package and ship coolers containing potentially hazardous material will be trained accordingly.

START-3 personnel will prepare and complete chain-of-custody forms using the Scribe Environmental Sampling Data Management System (SCRIBE) for all samples sent to a START-3 designated off-site laboratory. The chain-of-custody procedures are documented and will be made available to all personnel involved with the sampling. A typical chain-of-custody record will be completed each time a sample or group of samples is prepared for shipment to the laboratory. The record will repeat the information on each sample label and will serve as documentation of handling during shipment. A copy of this record will remain with the shipped samples at all times, and another copy will be retained by the member of the sampling team who originally relinquished the samples. At the completion of the project, the data manager will

export the SCRIBE chain-of-custody documentation to the Analytical Service Tracking System (ANSETS) database.

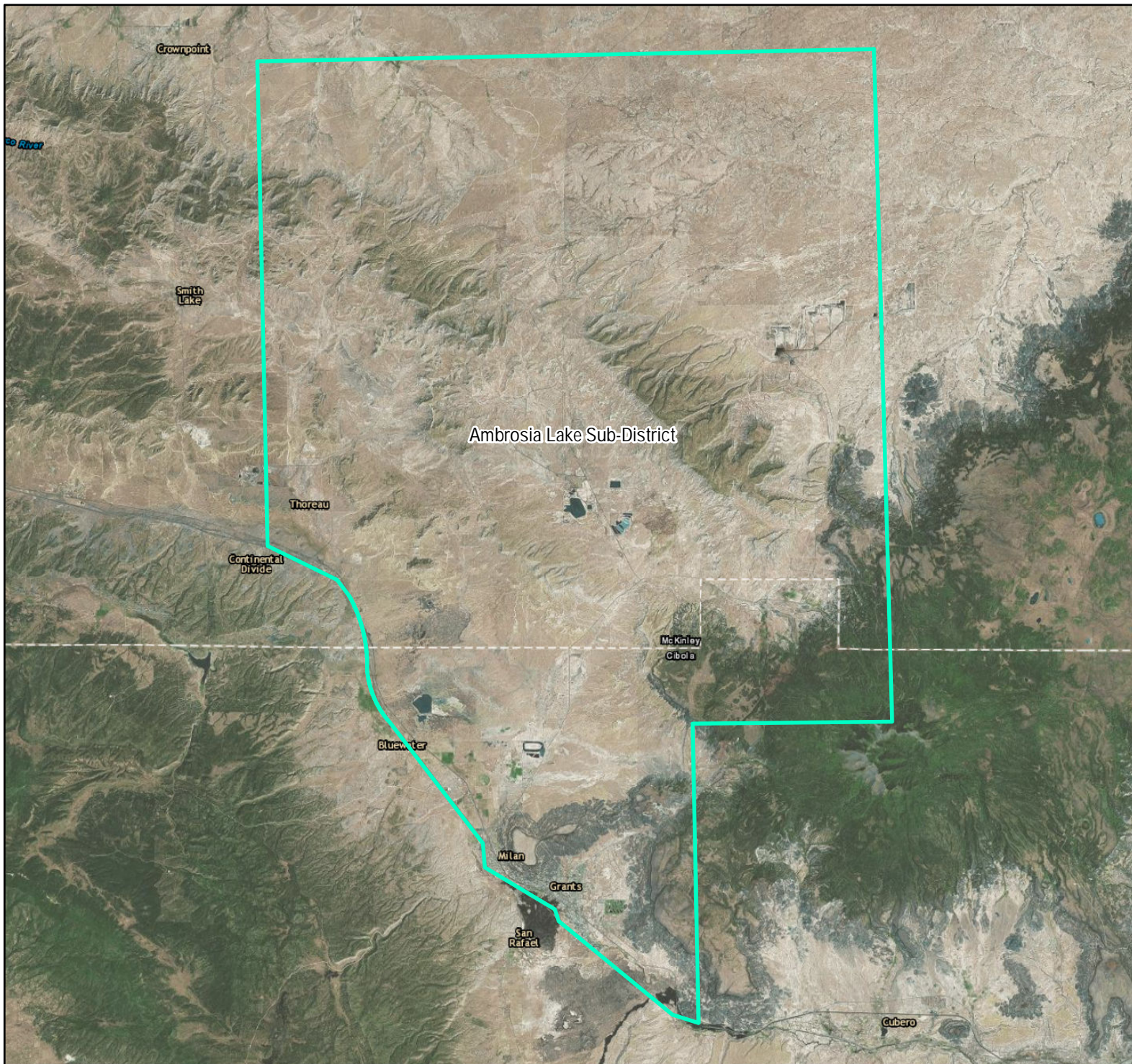
Samples relinquished to the participating laboratories will be subject to the following procedures for transfer of custody and shipment:

- Samples will be accompanied by the COC record. When transferring possession of samples, the individuals relinquishing and receiving the samples will sign, date, and note the time of the sample transfer on the record. This record provides verification of the integrity of the samples and ensures samples are not tampered with or altered prior to receipt by the laboratory.
- Samples will be properly packed for shipment and dispatched to the appropriate laboratory for analysis with separate, signed custody records enclosed in each sample box or cooler. Sample shipping containers will be custody-sealed for shipment to the laboratory. The preferred procedure includes use of a custody seal wrapped across filament tape that is wrapped around the package at least twice. The custody seal will then be folded over and stuck to seal to ensure that the only access to the package is by cutting the filament tape or breaking the seal to unwrap the tape.
- If sent by common carrier, a bill of lading or airbill will be used. Bill of lading and airbill receipts will be retained in the project file as part of the permanent documentation of sample shipping and transfer.

SOPs 1101.01 and 1102.01 describe these procedures in more detail.

6.2 PROJECT DOCUMENTATION

Documentation is discussed in Section B10 and the final report in Section C of the QAPP.



New Mexico

LEGEND

Uranium Subdistricts



0 6 12
Miles

TASK ORDER: 0041
CERCLIS ID: NMN000607481

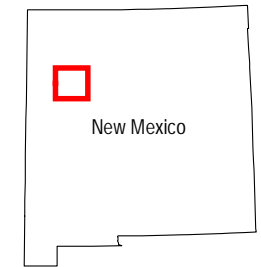
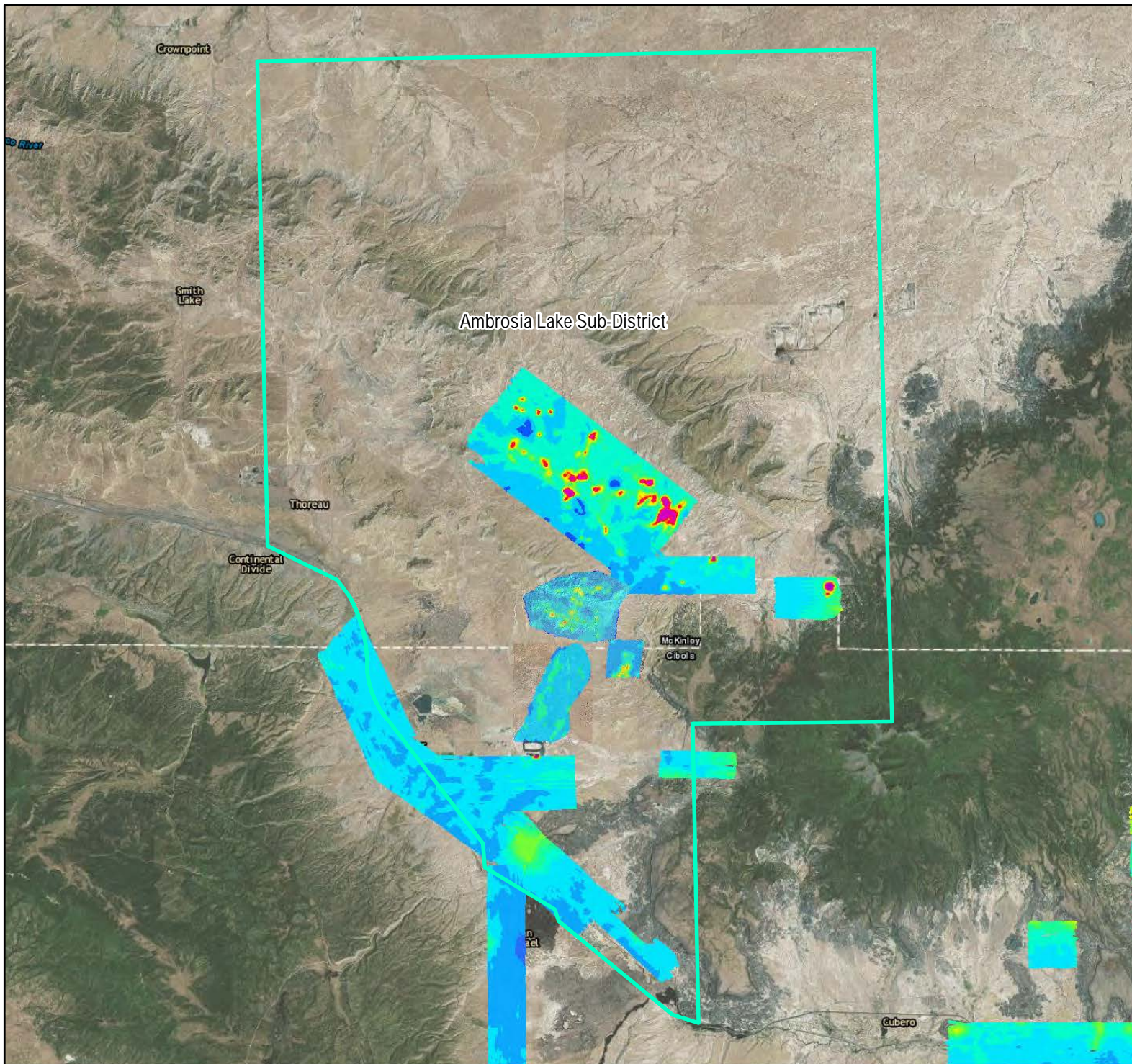
SOURCE: ESRI ONLINE IMAGERY



USEPA REGION 6

FIGURE 2-1
AMBROSIA LAKE SUBDISTRICT
TRONOX NAVAJO AREA URANIUM MINES
SECTIONS 35/36 (CLIFFSIDE) MINES
HIGHWAY 509
MCKINLEY COUNTY, NEW MEXICO

DATE	PROJECT NO	SCALE
JUL 2015	20406.012.041.4103.01	AS SHOWN



LEGEND

Uranium Subdistricts

Parameter: Exposure Rate (microR/hr)	
 < 5,000	 25,000 : 30,000
 5,000 : 10,000	 30,000 : 35,000
 10,000 : 15,000	 35,000 : 40,000
 15,000 : 20,000	 40,000 : 45,000
 20,000 : 25,000	 > 45,000



0 6 12
Miles

TASK ORDER: 0041

CERCLIS ID: NMN000607481

SOURCE: ESRI ONLINE IMAGERY



USEPA REGION 6

FIGURE 3-1
EPA ASPECT GAMMA EXPOSURE
AMBROSIA LAKE SUBDISTRICT
TRONOX NAVAJO AREA URANIUM MINES
SECTIONS 35/36 (CLIFFSIDE) MINES
HIGHWAY 509
MCKINLEY COUNTY, NEW MEXICO

DATE	PROJECT NO	SCALE
JUL 2015	20406.012.041.4103.01	AS SHOWN

APPENDIX A

PROTOCOL FOR ASSESSMENT OF TRONOX ABANDONED URANIUM MINE SITES

PROTOCOL

FOR

ASSESSMENT OF TRONOX ABANDONED URANIUM MINE SITES
AMBROSIA LAKE, MCKINLEY COUNTY, NEW MEXICO
AND NAVAJO NATION

Prepared for

U.S. Environmental Protection Agency Region 6

1445 Ross Ave.
Dallas, Texas 75202

Contract No. EP-W-06-042

Technical Direction Document No. 1/WESTON-042-14-027

TDD No. TO-0001-42-14-27

WESTON Work Order No. 20406.012.001.0900.01

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July 2015

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ACRONYMS

ALARA	As Low as Reasonably Achievable
ANSI	American National Standards Institute
ARARs	Applicable or Relevant and Appropriate Requirements
BLM	U.S. Bureau of Land Management
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
cpm	counts per minute
CRCPD	Conference of Radiation Control Program Directors
CFR	Code of Federal Regulations
DCGL	Derived Concentration Guideline Level
DOD	Department of Defense
DOE	Department of Energy
EPA	U.S. Environmental Protection Agency
HRS	Hazard Ranking System
L _C	Critical Level
L _D	Detection Limit
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDC	minimum detectable concentration
mrem	millirem
mrem/y	millirem per year
MOU	Memorandum of Understanding
μR/hr	microRoentgens per hour
NaI	sodium iodide
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NMEMNRD	New Mexico Energy, Minerals, and Natural Resources Department
NMED	New Mexico Environment Department
NPL	National Priority List
NRC	Nuclear Regulatory Commission
OSC	On-Scene Coordinator
OSWER	Office of Solid Waste and Emergency Response
pCi/g	Picocuries Per Gram

pCi/L	Picocuries Per Liter
PIC	Pressurized Ionization Chamber
PRG	Preliminary Remediation Goal
PRRL	Post Reclamation Radiation Level
RESRAD	Residual Radioactivity modeling program
SSL	Soil Screening Levels
TEDE	Total Effective Dose Equivalent
TENORM	Technologically Enhanced Naturally Occurring Radioactive Material
UMSA	Uranium Mine Site Assessment
UMTRCA	Uranium Mill Tailings Radiation Control Act
UNSCEAR	United Nations Scientific Committee on Effects of Atomic Radiation
WL	Working Level

1. INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 6 Superfund Technical Assessment and Response Team (START-3) contractor, Weston Solutions, Inc. (WESTON®), was tasked by EPA Region 6 Prevention and Response Branch (EPA-PRB) under Contract Number EP-W-06-042, TDD No. 1/WESTON-042-14-027 to conduct assessments of former uranium mines in the Ambrosia Lake subdistrict of the Grants Mineral Belt. START-3 was specifically tasked to develop a protocol for the assessment of radioactive contamination at the former mines using existing radiation guidelines, risk analysis procedures, and exposure models.

The Ambrosia Lake subdistrict of the Grants Mineral Belt is located in McKinley County in northwestern New Mexico, near the town of Grants. This area was the site of extensive uranium mining from 1950 until the early 1980s. During this time the economy of the region changed from agriculture to uranium mining and uranium ore processing. Most uranium mining activities stopped in the recession of 1982-1983.

In 2007, EPA Region 9 began a project in coordination with the Navajo Nation to investigate residences on the Navajo Indian Reservation located in parts of Arizona, New Mexico and Utah for radioactive contamination caused by the legacy of uranium mining on the reservation. In 2009, EPA Region 6 initiated a similar project to investigate radioactive contamination in residences near uranium mining and ore processing areas outside of the Navajo Reservation in the Grants Mineral Belt area of northwestern New Mexico. These areas included non-Navajo lands adjacent to the eastern boundary of the Navajo Reservation with public and/or private ownership, privately-owned lands, and lands owned by the Laguna and Acoma Pueblos. In 2015 EPA Region 6 began a project to investigate radioactive contamination at former uranium mines in the Ambrosia Lake subdistrict of the Grants Mineral Belt. This document outlines an approach for this investigation, using established EPA guidelines and documents.

1.1 PROJECT OBJECTIVES

The purpose of this document is to provide a protocol for determining the most appropriate and applicable radiological threat abatement action criteria for abandoned uranium mine (AUM) sites. As a framework for evaluating the criteria that are calculated using this protocol, this document lists relevant federal and state regulations and summarizes radiological threat

abatement action criteria that have been used on past and current uranium mine or mill remediation projects in the southwestern United States. The protocol established in this document describes the calculations and tools needed to develop radiological threat abatement levels that take into account the unique characteristics of each uranium mine site. It was developed to comply with the following specific guidelines:

1. Provide a process for determining health risk-based radiological threat abatement criteria at AUM sites that is consistent with CERCLA guidance as applied to contaminated sites, regardless of the type of contamination (hazardous chemicals or radioactive).
2. Identify and apply the health risk goal that is designed for sites contaminated with radioactive materials, which is not to exceed 3×10^{-4} .
3. Identify, utilize, and compare results from appropriate computer models and tools currently available for calculating acceptable radionuclide concentrations in soil, and consistently apply those tools to determine criteria for selected sets of site conditions (scenarios) at AUM sites.

It is important to note that no single residual contamination criterion can be identified for use at these sites because there exists no applicable regulation (state, federal, or local) that establishes such a value, and risk-based criteria are determined using scenarios that account for reasonably expected uses of the site following remediation and site-specific input parameters for the computer models. This document applies the CERCLA risk-based evaluation process using U.S. EPA-developed tools and models to evaluate and provide abatement action criteria for several scenarios that may reasonably be encountered at AUM sites in the southwestern U.S. The process described and used in this document should be similarly applied for any site that does not reasonably fit into one of the established scenarios.

Additionally, Appendix 3 provides survey methods using the best available science to conduct the assessment. These survey methods have been designed to maximize the use of field or in-situ data, and to minimize the use of sampling which requires the reliance on laboratory analysis. However, field measurements require laboratory verification; therefore laboratory analysis should be utilized when it is determined to be more advantageous to the project.

2. REVIEW OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

2.1 INTRODUCTION

Because U.S. laws do not classify uranium mine waste rock as a radioactive waste, its placement in radioactive waste disposal facilities is not required. The Atomic Energy Act does not require controls on uranium mining and neither the Nuclear Regulatory Commission (NRC) nor the Department of Energy (DOE) regulate the disposal of conventional (open pit and underground) mining wastes. These wastes are classified as Technologically Enhanced Naturally Occurring Radioactive Material (TENORM). TENORM is defined as naturally occurring radioactive materials that have been concentrated or exposed to the accessible environment as a result of human activities. When a material is called TENORM, it means that the radiological, physical, and chemical properties of the radioactive material have been altered by having been processed or disturbed in a way that increases the potential for human and/or environmental exposures.

While none of the federal or state regulations specify acceptable radionuclide concentrations in soil at legacy uranium mining facilities, numerous regulations and standards have been promulgated to address radiological threat abatement standards for soils at other types of sites. The following sections provide a synopsis of the existing federal and state standards and regulations related to uranium mines, soil contamination, and radiation that may serve as potential Applicable or Relevant and Appropriate Requirements (ARARs).

2.2 ENVIRONMENTAL PROTECTION AGENCY REGULATIONS

U.S. Environmental Protection Agency (EPA) has authority, under a variety of legal statutes, to protect the public and the environment from exposures to both the hazardous and toxic characteristics of wastes classified as TENORM. These EPA regulations include the Clean Water Act, the Clean Air Act, the Safe Drinking Water Act, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Uranium Mill Tailings Radiation Control Act (UMTRCA). While soil contamination at legacy uranium mines can result in having an uncontrolled release of radioactive material from the site, and therefore can result in issues related to the Clean Air Act and the Clean Water Act, this review will solely focus on those applicable EPA regulations which address soil contamination. This review will also be

limited to radioactive contaminants at mine sites, although chemical contaminants may also be present.

2.2.1 Standards for Uranium and Thorium Mill Tailings

The EPA regulations most commonly cited as potentially relevant to be soil contamination standards at uranium mine sites are promulgated in 40 CFR Part 192, entitled "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings." While this is logical since the primary contaminant in both uranium ore and mill tailings is radium-226 (Ra-226), waste rock piles or ore stock piles at abandoned or active uranium mines are not subject to this regulation since these materials have not been milled. The regulation was developed specifically to address uranium mill tailings at 24 sites designated under Section 102(a)(1) of UMTRCA (Title I sites). The purpose of these standards was to limit the risk from inhalation of radon decay products in houses built on land contaminated with tailings, and to limit gamma radiation exposure of people using contaminated land. The list of 24 Title I sites is a closed set chosen in 1979 that cannot be appended.

The UMTRCA standards specify that the concentration of Ra-226 in land averaged over an area of 100 m² shall not exceed 5.0 picocuries per gram (pCi/g) above background in the top 15 cm, and 15 pCi/g in subsequent 15 cm layers. The concentration criterion for surface soil (5 pCi/g of Ra-226) is a health-based standard assuming a residential use scenario. The relevant source of health risk for surface soil is exposure to gamma radiation, which is the basis for this standard. Since legacy uranium mine sites are not thought to be commonly present in residential areas, this regulation may not be exactly applicable to this review of regulations pertinent to uranium mine waste.

The concentration criterion for subsurface soil of 15 pCi/g of Ra-226 is not a health-based standard, but rather was developed to allow the use of field measurements rather than laboratory analyses to determine when buried tailings had been detected. As cited in EPA Directive 9200.4-25, the 15 pCi/g subsurface criteria is a tool for use in locating discrete spots of high activity in subsurface locations. If extensive subsurface contamination exists, the use of the 15 pCi/g standard is not appropriate and 5 pCi/g is recommended as the suitable level for subsurface contamination.

The UMTRCA standard further stipulates that in any occupied or habitable building the objective of any remedial action should be to achieve an annual average radon concentration (including background) not to exceed 0.02 working level (WL), and that gamma radiation levels should not exceed 20 microRoentgens per hour ($\mu\text{R/hr}$) above background.

2.2.2 CERCLA (Superfund)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; otherwise known as Superfund) may apply to abandoned uranium mines whenever there has been an uncontrolled release or suspected release of hazardous substances. Oftentimes the lack of viable human health exposure pathways precludes the inclusion of existing mine sites on the National Priority List (NPL). If a uranium mine is on the NPL, the CERCLA process must be followed. However, similar to the EPA regulations described above in Section 2.2.1 above, the CERCLA process may not specifically apply to existing uranium mining operations that are not listed on the NPL.

In June, 2014, the EPA published new guidance in the form of OSWER 9285.6-20, “Radiation Risk Assessment at CERCLA Sites: Q&A”. This document is intended to provide guidance for EPA staff on how to conduct a risk assessment for radiologically contaminated CERCLA sites. However, in the introductory remarks, the document clarifies that it is not a regulation, nor can it impose legally binding requirements.

The EPA previously issued guidance entitled “Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination” (OSWER No. 9200.4-18, August 22, 1997). This 1997 guidance provided clarification on establishing protective cleanup levels for radioactive contamination at CERCLA sites. The guidance reiterated that radionuclide abatement actions are governed by the risk range for all carcinogens established in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) when Applicable or Relevant and Appropriate Requirements (ARARs) are not available or are not sufficiently protective. The guidance states that radiological threat abatement actions generally should achieve a level of risk within the 10^{-4} to 10^{-6} carcinogenic risk range based on the reasonable maximum exposure for an individual.

The EPA also previously issued “Radiation Risk Assessment at CERCLA Sites: Q&A” (OSWER No. 9200.4-31P, December 1999). The 1999 Risk Q&A provided an overview of the

then current EPA guidance for risk assessment and related topics for radioactively contaminated CERCLA sites.

OSWER 9285.6-20 updates the 1999 version of the Risk Q&A by summarizing and citing guidance that was developed after the 1999 version. While the 2014 guidance addresses many areas and issues, it most significantly describes OSWER's position that radiological threat abatement criteria be risk-based, consistent with EPA policy for other carcinogens, and not dose-based. It states that dose assessment used as a method to assess risk is not recommended as a way of ensuring human health protection at CERCLA remedial sites.

The EPA defines an increased cancer risk range of 10^{-4} to 10^{-6} to be an acceptable risk criterion for the radionuclides of concern. While the upper end of the risk range is not a discrete line at 1×10^{-4} , EPA generally uses 10^{-4} in making risk management decisions, and 10^{-6} is considered a concentration where additional assessment is warranted. For example, Preliminary Remediation Goals (PRG) are generally defined at a risk of 10^{-6} , and are not de facto cleanup levels. PRG concentrations are indicative of areas that do not require further federal attention. Removal Action Levels (RAL) are generally based on 1×10^{-4} risk and are used to define areas that warrant a time-critical removal action. Radiological threat abatement levels are calculated for the 10^{-4} to 10^{-6} risk range based on specific site conditions and contaminants. The EPA has a substantial history of accepting a RAL for radionuclides that is protective to a 3×10^{-4} risk level, which in prior OSWER guidance was considered equivalent to a dose of 15 millirem per year (mrem/y) above background. The 2014 OSWER guidance states that the 3×10^{-4} risk level is substantively equivalent to 12 mrem/y.

Per the 2014 OSWER guidance, risks from radionuclide exposures at Superfund remedial sites should be estimated in a manner analogous to that used for chemical contaminants. The estimates of intake by inhalation and ingestion and the external exposure over the period of exposure estimated for the land use (e.g., 30 years residential, 25 years commercial/industrial) from the exposure assessment should be coupled with the appropriate slope factors for each radionuclide and exposure pathway. Only excess cancer risk should be considered for radionuclides. When calculating radiological threat abatement levels, the total incremental lifetime cancer risk

attributed to radiation exposure is estimated as the sum of the risks from all radionuclides in all exposure pathways.

2.2.3 Phosphate Mine Waste

Phosphate ore used primarily in fertilizer contains uranium-238 (U-238) and its decay products at concentrations ranging from 7 to 100 pCi/g, and the fertilizer derived from this ore contains from 5 to 33 pCi/g of Ra-226. The processing waste byproduct phosphogypsum also contains elevated concentrations of these isotopes at concentrations ranging from 12 to 35 pCi/g, and is considered TENORM by the EPA. While there are no federal or state regulations related to cleanup standards for these contaminants, EPA regulations in 40 CFR 61 subpart R state that phosphogypsum intended for agricultural use must have a Ra-226 concentration no greater than 10 pCi/g.

2.3 NUCLEAR REGULATORY COMMISSION REGULATIONS

It is important to note that these regulations only apply to radioactive material at sites and facilities licensed by the NRC. Since operating and legacy mines are not licensed facilities, the uranium ore and waste rock TENORM encountered thereon is not regulated by the NRC. However, some NRC regulations that relate specifically to protection of the general public from radiation can provide relevant guidance. NRC regulations which can provide this guidance are promulgated in 10 CFR 20: “Standards for protection against radiation,” 10 CFR 40: “Domestic licensing of source material,” and 10 CFR 61: “Licensing requirements for land disposal of radioactive waste.”

2.3.1 Standards for Protection from Radiation Exposure

In 1999, the NRC promulgated the license termination rule which provided guidance on cleanup standards for licensed facilities. The regulation contained in 10 CFR 20.1402 states that a site will be acceptable for unrestricted use if residual radioactivity that is distinguishable above background results in a Total Effective Dose Equivalent (TEDE) to an average member of the critical group not to exceed 25 mrem per year, and residual radioactivity is reduced to levels that are As Low as Reasonably Achievable (ALARA). This standard also specifies that this requirement does not apply to uranium recovery facilities already subject to Appendix A to 10 CFR 40 which is described in section 2.3.2 below.

In 2002 the NRC and EPA entered in a Memorandum of Understanding (MOU), which the EPA published as OSWER 9295.8-06a. This MOU states that EPA will defer its authority under CERCLA for the majority of sites decommissioned under NRC authority, provided certain conditions. The document lists soil concentration trigger levels for 37 common radioisotopes, above which requires consultation between the NRC and EPA. The majority of trigger level concentrations were based on a PRG calculation program assuming a risk of 1×10^{-4} , however the Ra-226 trigger level was based on the UMTRCA regulations. The following table provides the trigger levels for radioisotopes of interest to legacy uranium mine remediation.

Table 2-1. NRC Uranium Mine CERCLA Action Levels

	Residential Use pCi/g	Industrial Use pCi/g
U-238+D *	74	179
Ra-226 +D	5	5
Pb-210 + D	15	123

* +D indicates the decay products of the indicated isotope are included

2.3.2 Domestic Licensing of Source Material

The oversight of uranium and thorium mills is covered in these NRC regulations which include guidance on cleanup standards to be applied during site reclamation. The cleanup standards are described in Criterion 6(6) to Appendix A of 10 CFR 40. These cleanup regulations are similar to the UMTRCA standards cited earlier, but contain a modification unique to uranium ore and waste rock. The regulation contains the standard requirement of a Ra-226 maximum concentration of 5 pCi/g in the top 15 cm averaged over 100 m², and 15 pCi/g maximum concentration in subsequent 15 cm layers. The unique modification to these criteria is if the soil has radionuclide contaminants other than Ra-226 and daughters (like U-238), there is an additional requirement. In the case of uranium ore, to demonstrate compliance with the reclamation criteria, the licensee must calculate using site specific parameters the TEDE resulting from the 5 and 15 pCi/g criteria for Ra-226, which is designated the “Benchmark Dose”. The revised soil concentration criteria is then calculated to be the concentration of the entire U-238 decay chain which results in a dose equivalent (excluding radon) equal to the TEDE from the “Benchmark Dose” alone. Any residual contamination on abandoned structures is

included in the calculation of the TEDE. The revised soil concentration criteria will obviously be less than the 5 pCi/g and 15 pCi/g criteria.

These criteria are potentially applicable when considered with EPA guidance contained in Directive 9200.4-35P. This Directive explains in more detail the application of this benchmark approach and concludes that if the majority of the radiological risk posed by the contaminants of concern at the site in the soil and structures are U-238, U-234, Ra-226, Th-230, Th-232, and Ra-228, then the Criterion 6(6) benchmark dose limit is a “potentially relevant and appropriate requirement for those contaminants.”

2.3.3 Licensing Requirements for Land Disposal of Radioactive Waste

10 CFR 61.41 comprises the performance objective for the protection of the general population from releases of radioactivity that originates from land disposal of radioactive waste including waste from uranium mill operations: “Concentrations of radioactive materials which may be released to the general environment in ground water, surface water, air, soil, plants, or animals must not result in an annual dose exceeding an equivalent of 25 mrem to the whole body, 75 mrem to the thyroid, and 25 mrem to any other organ of any member of the public. Reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable.” These criteria are similar to those contained in the NRC’s license termination rule.

2.4 BUREAU OF LAND MANAGEMENT REGULATIONS

According to a recent draft document by the New Mexico Energy Minerals and Natural Resources Department (NMEMNRD), the U.S. Bureau of Land Management (BLM) has been using radiation guidance since the late 1970s for the reclamation of uranium mines on BLM and Indian Lands in New Mexico. The guidance utilizes the NRC standard of 100 mrem/yr above background for access to “unrestricted areas [of mill tailings] to individual members of the public” (10 CFR 20.1301). Assuming continuous presence on site, or 8,760 hours per year, the allowable exposure rate is approximately 12 μ R/hr which the BLM has applied at multiple sites. Coincidentally, this standard is approximately twice the background gamma exposure rate at high elevations where uranium mines are present. The use of “twice background” as a preliminary measurement standard is a common indicator of the presence of contamination.

For radon, BLM uses 3.0 picocuries per Liter (pCi/L) above background as its criteria. For a uranium mine site to be considered remediated using the BLM guidance, the site must emit less than 12 μ R/hr gamma radiation above background and less than 3.0 pCi/L of radon above background.

BLM reportedly utilized these criteria for the reclamation of the Jackpile Mine in Cibola County, New Mexico, and the Church Rock Mine in McKinley County, New Mexico. These criteria were also reported to have been used by EPA to reclaim abandoned uranium mines on Navajo Allotted Lands. While potentially useful for comparison purposes, these criteria are part of an internal BLM guidance standard, not a federal regulation.

2.5 STATE OF NEW MEXICO GUIDANCE

In March, 2014, the NMEMNRD and the New Mexico Environment Department (NMED) jointly issued a draft guidance document to assist mine site responsible parties to address soil cleanup standards as part of reclamation activities at existing mines. This guidance contained elements that are similar to the UMTRCA standards, but also contained an additional requirement. Specifically, the draft New Mexico guidance incorporated the UMTRCA standards of 5 pCi/g for surface soil and 15 pCi/g below the surface, but added a new criteria called the site Post Reclamation Radiation Level (PRRL). The PRRL is the gamma exposure rate that would result from an assumed 5 pCi/g of Ra-226 above background. The applicable criterion is then that the gamma exposure rate across the site after reclamation should not exceed the PRRL at any location. This is an interesting criterion as it is similar to the gamma walkover scanning commonly done after many of the radiological abatement actions, but instead of reporting results in counts per minute (CPM) from which soil concentration is inferred, it reports results in a directly usable format.

In April, 2014, the NMEMNRD issued similar draft regulations concerning reclamation of new mine sites.

2.6 TEXAS DEPARTMENT OF STATE HEALTH, DECOMMISSIONING STANDARDS

Similar to the NRC's license termination rule discussed in section 1.3.1 above, the Texas Administrative Code specifies that for facilities that are undergoing decommissioning, a site will

be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a TEDE value for an average member of the critical population group that does not exceed 25 mrem per year.

In addition, no licensee shall cause the concentration of Ra-226 or Ra-228 in soil, averaged over any 100 m² to exceed the background level by more than 5 pCi/g , averaged over the first 15 cm of soil below the surface; and 15 pCi/g averaged over 15 cm thick layers of soil more than 15 cm below the surface.

2.7 CONFERENCE OF RADIATION CONTROL PROGRAM DIRECTORS

The Conference of Radiation Control Program Directors (CRCPD) is non-governmental organization dedicated to radiation protection, with membership primarily composed of members of state or local government agencies that regulate the use of radioactive materials. One of its primary missions is to promote consistency in addressing radiation protection issues. As such, the CRCPD issues a list of suggested state regulations on a number of radiological topics, including Part N, Suggested Regulations and Licensing of TENORM. This document suggests a dose cleanup standard for all TENORM other than Ra-226 and Ra-228 based on a maximum of 25 mrem per year to an average member of the critical group, and a concentration standard for Ra-226 and Ra-228 of 5 pCi/g averaged over 100 m² in incremental 15 cm layers. It should be recognized that these are only suggested regulations and are not binding.

2.8 ANSI/HPS N13.53

In 2009 the American National Standards Institute and Health Physics Society (ANSI/HPS) published N13.53 entitled “Control and Release of Technologically Enhanced Naturally Occurring Radioactive Material”. This document did not provide recommended cleanup criteria for TENORM, or specifically uranium mine waste, but does provide an expanded discussion of the potential relevant regulations and guidelines on this subject. The reader is encouraged to review this document to learn additional information regarding the details and derivation of these potential regulations.

2.9 SUMMARY OF POTENTIALLY APPLICABLE REGULATIONS

Federal and state regulations were reviewed to identify potential ARARs that might best inform soil radiological threat abatement criteria for legacy uranium mines. The underlying basis for the regulations generally fell into three approaches; a soil level in units of pCi/g, a dose level in terms of TEDE, and a risk level in terms of likelihood of health impacts. A BLM internal guidance document and New Mexico draft regulations included the novel addition of a gamma exposure rate criterion. It is important to restate that none of the regulations are specifically applicable to legacy mine waste since neither the NRC, EPA, or any state agency currently have jurisdiction over this material. A summary of the regulations reviewed is summarized in the table below.

Table 2-2. Summary of Potential ARARs

EPA		Soil standard	TEDE standard	Risk standard	Exposure rate standard
	UMTRCA	5/ 15 pCi/g			
	CERCLA		12 mrem/y	1x10 ⁻⁴ to 1x10 ⁻⁶	
	Phosphogypsum	10 pCi/g			
NRC					
	License termination rule		25 mrem/y		
	U mill Reclamation	5/15 pCi/g			
	Land Disposal		25 mrem/y		
BLM					12 µR/hr
New Mexico		5/15 pCi/g			PRRL
Texas		5/15 pCi/g	25 mrem/y		
CRCPD		5 pCi/g			

Of particular interest, as described in section 1.3.2 above, EPA Directive 9200.4-35P may present the strongest case for the Benchmark approach coupled to the 5/15 pCi/g standards described in 10CFR40, Appendix A to be the most likely potentially relevant and appropriate requirement for the contaminants of concern at a legacy uranium mine site. However, OSWER 9285.6-20 also stipulates that the benchmark dose cannot exceed 12 mrem/y, which the EPA considers to be equivalent to the maximum risk under CERCLA standards. Notwithstanding, review of recent cleanup criteria at inactive uranium mine sites on the NPL are based on risk above background levels, as discussed in the following section.

3. SELECTION OF RADIOLOGICAL THREAT ABATEMENT ACTION CRITERIA

According to ANSI Standard N13.53, “The management of TENORM is unique among radioactive materials in that there are no uniform national guidelines or regulations for its management.” Since there are no definitive regulations, it may be useful to review a few precedents where EPA developed criteria to address contamination at uranium mines. Following this review of precedents, this section uses the recommended EPA protocol to calculate potential radiological threat abatement action criteria.

3.1 MIDNITE URANIUM MINE NPL SITE

In 2006, EPA published the Record of Decision regarding the cleanup of one of the few uranium mine sites on the NPL. The Midnite Mine was located on the Spokane Indian Reservation about 45 miles from Spokane, Washington. The open pit mine operated from 1954 to 1981 and was added to the NPL in 1999 after being scored using the Hazard Ranking System (HRS). It appeared that the primary hazard on the site was from contaminated water in the open pits and from seeps. EPA conducted risk assessments based on a residential scenario and calculated risk using the following assumptions of subsistence activities and diet:

- Residents lived on the mined area 24 hours/day for 70 years
- Residents lived on wild plants, game and fish collected from the mined area
- Residents drank surface water from the mined area.

The EPA concluded that the calculated cleanup criteria based on the above assumptions were more stringent than background concentrations of the radioactive contaminants of concern. It was determined that environmental media in un-impacted areas near the site contained naturally elevated areas of the radioactive contaminants. Under CERCLA, cleanup levels are generally not set below background levels. Cleanup criteria for this site were determined from a statistical evaluation of the 95% upper tolerance level of the background data. These criteria were 29 pCi/g for total uranium, 4.7 pCi/g for Ra-226, and 0.0075 pCi/g for lead-210 (Pb-210). (Note to reader, why these isotopes are not found in equilibrium is unclear.) Therefore, the site is being returned to natural conditions, those occurring prior to mining.

3.2 UNC NORTHEAST CHURCHROCK MINE NON-NPL SITE

The UNC mine is located approximately 17 miles northeast of Gallup, New Mexico on approximately 125 acres adjacent to Navajo Nation land. The mine operated from 1967 to 1982, and is not currently on the NPL. Due to the close proximity of residents adjacent to the contaminated property, the EPA has ordered three time-critical removal actions since 2006, resulting in the removal or stabilization of approximately 140,000 cubic yards of soil.

The EPA determined that the critical contaminant was Ra-226, the average background of Ra-226 in the area was 1.0 pCi/g, and after performing a PRG risk analysis assuming a residential scenario selected an action level for Ra-226 of 1.24 pCi/g above background. This action level is based on a risk of 2×10^{-4} , including background. Use of a 2×10^{-4} risk was justified by the EPA because the 1×10^{-6} risk of 0.0124 pCi/g is below background level, the concentration is detectable by standard laboratory methods, and is consistent with the general risk range cited in the NCP.

3.3 TECHNICAL REPORT ON TENORM FROM URANIUM MINING

In 2008, EPA published a two-volume assessment of the radiological hazards from abandoned uranium mines (UAMs) designated as EPA-402-R-08-005. Volume 2 of this report entitled “Investigation of Potential Health, Geographic, and Environmental Issues of Abandoned Uranium Mines” included a discussion of the potential radiogenic cancer rates from these sites and evaluated which pathways of exposure and radionuclides may pose the greatest hazards to members of the public. This document considered two scenarios, residential and recreational. The report concludes that given most abandoned uranium mines are on federal land, are in isolated areas, lack potential drinking water and infrastructure such as roads, the risk from a residential scenario is a low probability. While the risk from a residential scenario would be at the highest end of the risk spectrum and therefore represents the upper bound of risk, the report concludes that the primary exposures to TENORM wastes at uranium mines involves recreational use of the site, in which the site is visited occasionally by hikers, campers, or driven over by all-terrain vehicles. Users would likely visit these abandoned sites for short periods of time, such as two weeks, which is the common maximum time the National Park Service issues backcountry permits. Occupational workers such as government employees performing site

inspections could also spend similar periods of time at these locations. The report concluded that the primary contaminant of concern was Ra-226, the critical pathway of exposure was external gamma exposure from contaminated soil, and presented the cancer risk estimates in the following table:

Table 3-1. AUM Concentrations of Ra-226 + D per Risk Probabilities*

Exposure Frequency (days/yr)	1x10 ⁻⁴ risk	1x10 ⁻⁶ risk
1	4,297 pCi/g	43.0 pCi/g
14	307	3.07
30	143	1.43
140	30.7	0.307
352	12.3	0.123

* EPA-402-R-08-005

This data demonstrates that assuming a reasonable visitation time of 14 days, the lifetime cancer risk of 1x10⁻⁶ would be attained at a soil concentration of about 3.1 pCi/g. These values were calculated using the Soil Screening Levels (SSL) protocol which at the time of this report was considered by the authors to be more appropriate than the PRG calculator. However, the SSL risk assessment equations have now been superseded by those in the PRG calculator and therefore EPA now recommends use of the PRG calculator for estimating risk at CERCLA sites.

3.4 CALCULATION OF RADIOLOGICAL THREAT ABATEMENT CRITERIA USING PRG CALCULATOR

In June, 2014 EPA issued OSWER 9285.6-20, “Radiation Risk Assessment at CERCLA Sites: Q&A.” Per this guidance, risks from radionuclide exposures at Superfund sites should be estimated in a manner analogous to that used for chemical contaminants. The estimates of intake by inhalation and ingestion and the external exposure estimated for the land use should be coupled with the appropriate slope factors for each radionuclide and exposure pathway. This document recommends the use of the PRG Calculator for Radionuclides for this assessment. Only excess cancer risk should be considered for radionuclides. When calculating radiological threat abatement levels, the total incremental lifetime cancer risk attributed to radiation exposure is estimated as the sum of the risks from all radionuclides in all exposure pathways.

PRG calculator is a web-based program that calculates the risk from each radionuclide, or a parent/progeny group of nuclides, though multiple pathways of potential concern. For abandoned uranium mine sites the contaminant of concern (COC) is unprocessed uranium ore. The individual COCs are U-238 and its daughter isotopes (U-238+D) defined in the PRG calculator (see section 2.2.2 of the User's Guide) as U-238, thorium-234 (Th-234), and protactinium-234 (Pa-234); U-234; Th-230; Ra-226 and its daughter isotopes (Ra-226 + D) defined as Ra-226, radon-222 (Rn-222), polonium-218 (Po-218), Pb-214, bismuth-214 (Bi-214), and Po-214; Pb-210; bismuth-210 (Bi-210); and Po-210. The pathways of concern for these radionuclides depend on the present or reasonable potential future land use and include ingestion of soil, inhalation of dust, and direct external gamma exposure for all land-use scenarios. Other pathways of concern that should be considered for any residential scenario include radon inhalation, the ingestion of produce grown in contaminated soil and the ingestion of meats (domestically raised or wild game) and dairy products from animals that graze in contaminated soil. All risks calculated by the model were for soil media, including those from the ingestion of produce and meats/dairy, except for radon inhalation which was calculated for air media. Exposure to contaminated drinking water was excluded as a pathway due to the lack of surface water and the extreme depth to groundwater in the area.

In the following sections, the PRG calculator was used to evaluate ten (10) potential scenarios. Exclusive, site-specific input values were selected for each scenario except the second residential scenario listed below and the Indoor and Outdoor Worker scenarios, for which a PRG was calculated using all default values.

- Residential (Radon Inhalation Only)
- Residential with default input values
- Residential (Town)
- Residential (Rural)
- Recreator (Backpacker)
- Recreator (Sheep Camp)
- Recreator (Hunter)
- Farmer
- Indoor Worker
- Outdoor Worker

PRG calculations for each of these scenarios are discussed in the following subsections. Note that although an effort was made to select input values specific to conditions likely to be met on AUM sites in New Mexico and Arizona, each site should be evaluated individually prior to assessment to determine not only the present and likely future land use but to confirm whether the site-specific values assumed for the PRG calculations in this protocol document match the subject site. If it is found that actual values vary significantly from those assumed, PRG(s) should be redeveloped for the site(s) utilizing the PRG calculator and the new input values.

Table 3-2 summarizes the input values, pathways of exposure, significant contributors to risk, and calculated Soil PRGs for each scenario at an acceptable risk of 3×10^{-4} . The data were summarized from PRG Calculator outputs that are provided as Appendix 1. To calculate PRGs for acceptable risk levels of 1×10^{-4} and 1×10^{-6} , simply divide the PRGs in Table 3-2 by 3 and 300, respectively.

3.4.1 Residential (Radon Inhalation Only)

The PRG Calculator models risk per unit concentration of *air* for the radon inhalation pathway. That is, it does not calculate the risk relative to radionuclide concentrations in soil. Assuming the default residential-scenario time spent indoors as 16.416 hours per day over a 26-year time period, the model calculated a risk contribution from Ra-226+D inhalation of 0.00451 per pCi/m³, which calculates to a PRG of 0.07 pCi/m³ or 0.00007 pCi/L. This value is orders of magnitude beneath the EPA-recommended action level for Rn-222 of 4.0 pCi/L. As such, the radiological threat abatement criterion for the inhalation of Rn-222 will be 4.0 pCi/L. The remainder of the scenarios discussed below all *exclude* the risk contribution from radon inhalation.

3.4.2 Residential with Default Values

It is important to remember that the PRG default input values are not specific to conditions around abandoned uranium mines. The default values are for a typical CERCLA site and assume a residential scenario. Using default parameters in the PRG calculator for soil contamination results in the following table of risks per pCi/g per radionuclide.

Table 3-2. PRGs for Potential Scenarios at AUM Sites

PRG Scenario	SOIL PRG (pCi/g) assuming 3x10E-4 Maximum Acceptable Risk _{1,2}	Contribution to Total Risk from Ra-226+D External Exposure	Total Exposure Duration	Routes of Exposure
Radon Inhalation ₃	7x10E-5 pCi/L	n/a	26 (6 ch, 20 adlt) yrs, 350 days/yr, 24 hrs/day (does not specify indoor vs outdoor hrs)	Radon Inhalation
Residential - Default	0.9	21% (Pb-210 produce ingestion contributes add'l 37%)	26 (6 ch, 20 adlt) yrs, 350 days/yr, 24 hrs/day (16.41 hrs indoors; 1.75 outdoors)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil Ingestion of Home-grown Produce
Residential (Town) ₄	4.6	93%	26 (6 ch, 20 adlt) yrs, 350 days/yr, 24 hrs/day (16.41 hrs indoors; 1.75 outdoors)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil Ingestion of Home-grown Produce
Residential (Rural) ₅	4.1	92%	26 (6 ch, 20 adlt) yrs, 350 days/yr, 24 hrs/day (16.41 hrs indoors; 1.75 outdoors)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil Ingestion of Home-grown Produce
Recreator (Backpacker) ₆	32.5	97%	30 (6 ch, 24 adlt) yrs, 14 days/yr, 24 hrs/day (24 hrs outdoors)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil
Recreator (Sheep Camp): Soil + Game ₇	2.9	95%	30 (6 ch, 24 adlt) yrs, 153 days/yr (350 days/yr for ingestion of sheep) 24 hrs/day (24 hrs outdoors)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil Ingestion of Sheep
Recreator (Hunter): Soil + Game and Fowl ₈	15.4	46% (add'l 49 % of total risk is contributed by ingestion of game)	30 (6 ch, 24 adlt) yrs, 14 days/yr (350 days/yr for ingestion of game) 24 hrs/day (24 hrs outdoors)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil Ingestion of Game and Fowl
Farmer: Soil + Biota ₉	site-specific	site-specific	site-specific	site-specific
Indoor Worker ₁₀	16.3	97%	25 years, 250 days/yr, 8 hrs/day (8 hrs indoors)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil
Outdoor Worker ₁₀	7.3	97%	25 years, 225 days/yr, 8 hrs/day (8 hrs outdoors)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil

¹The input values for each PRG presented in this table should be compared to actual site-specific values; if site-specific values differ significantly, a PRG should be re-calculated for the individual site. Additionally, to calculate PRGs for acceptable risk levels of 1×10^{-6} and 1×10^{-5} , simply divide the PRGs in Table 3-2 by 3 and 300, respectively. Input values for each scenario can be found in Appendix 1.

²All PRGs assume 20,000 m² (approx. 5 acres) of contaminated area and a 0 cm cover layer for outdoor Gamma Shielding Factor except for the Residential (Town) scenario. For Residential (Town), the contaminated area was assumed to be 2,000 m² (0.5 acre) to account for greater density of houses and other shielding infrastructure such as sidewalks, roadways, parking lots, etc.

³PRG does not back-calculate to soil the risk from radon inhalation but instead calculates the risk per chosen concentration in air.

⁴Input vegetable and fruit consumption as 5.5 g/day for both adult and child which was used in Grants Residential project. Input produce plant mass loading factor as 0.01; together with the default soil intake rates, this brings total soil ingestion rate in closer accordance with the 2011 Exposure Factors Handbook soil ingestion rates.

⁵Doubled the vegetable and fruit consumption rate and halved the vegetative cover fraction of the Residential (Town) scenario. Input produce plant mass loading factor as 0.01; together with the default soil intake rates, this brings total soil ingestion rate in closer accordance with the 2011 Exposure Factors Handbook soil ingestion rates.

⁶14 days is the common maximum time the National Park Service issues backcountry permits. There is no default value for total number of years; 30 years was chosen as this is between default residential value of 26 years and default farmer value of 40 years.

⁷Sheep Camp scenario from May - September. There is no default value for total number of years; 30 years was chosen as this is between default residential value of 26 years and default farmer value of 40 years. Sheep consumption rate was taken from farmer scenario default value for beef and was assumed to occur for 350 days/yr (same value as total exposure days/yr for Residential scenario). Sheep fodder and soil uptake rates were taken to be 1/2 of default beef rates in the farmer scenario; sheep water uptake rate was taken to be 1/2 of average cattle rate obtained from Univ. of Nebraska. Also, for this scenario, the PRG Calculator was utilized separately for 1) all Pathways of Exposure minus Meat Ingestion (153 days total exposure duration), and 2) the Meat Ingestion Pathway (350 days total exposure duration [default total exposure duration for residential scenario] since meat ingestion rates are per day. The Game On-Site Fraction was set to 0.42 to reflect that the sheep grazed on contaminated lands for 153 days out of the year (the game contaminated fraction and fraction of year game is on site were left at 1.0).

Table 3-2. PRGs for Potential Scenarios at AUM Sites (Continued)

⁹There is no default value for total number of years; 30 years was chosen as this is between default residential value of 26 years and default farmer value of 40 years. Game and Fowl consumption rates and fodder/soiluptake rates were taken from farmer scenario default values for beef and poultry. Water uptake rates for game and fowl were input using average cattle and poultry rates obtained from Univ. of Nebraska and Oregon State Univ., respectively. Also, for this scenario, the PRG Calculator was utilized separately for 1) all Pathways of Exposure including Fowl Ingestion but minus Land Game Ingestion (14 days total exposure duration - see footnote 6 above), and 2) the Game Ingestion Pathway (350 days total exposure duration [default total exposure duration for residential scenario]) since meat ingestion rates are per day. It was assumed that fowl (e.g. turkey) would be consumed for 2 weeks but game (e.g. elk) would be consumed nearly year-round. The Land Game and Fowl Contaminated Fractions were kept at 1.0 to reflect that the game and fowl grazed/ate on contaminated lands year-round.

⁹The PRG Farmer Scenario includes several potential pathways including the consumption of home-grown produce and ingestion of home-raised beef, dairy, poultry, eggs, fish and swine that will likely vary significantly from site to site. Therefore, a site that includes a farm as present or future land use should have a PRG calculated with site-specific parameters.

¹⁰PRG Calculator also includes scenarios for 'Construction Worker - Unpaved Road Traffic' and 'Construction Worker - Wind Erosion and Other Construction Activities' that require several site-specific variable inputs. Additionally, there exists a BPRG calculator for calculations that include a contaminated-building scenario and a SPRG calculator for scenarios with contaminated outside hard surfaces (sidewalks, roads, slabs, bldg. walls, etc), both requiring several site-specific variable inputs.

Table 3-3. Risks Based on Default Residential Scenario

Isotope	Ingestion Risk per pCi/g	Inhalation Risk per pCi/g	External Exposure Risk per pCi/g	Produce Consumption Risk per pCi/g	Total Risk per pCi/g
Bi-210	2.05E-11	4.11523E-14	1.82E-11	2.1097E-09	2.146E-09
Pb-210	1.32E-06	1.287E-09	8.77E-09	0.000128205	1.295E-04
Po-210	7.69E-08	3.61011E-11	8.2E-12	7.29927E-06	7.353E-06
Ra-226+D	7.52E-07	3.32226E-09	7.19E-05	8.26446E-05	1.555E-04
Th-230	1.86E-07	4.03226E-09	7.3E-09	1.84162E-05	1.862E-05
U-234	1.66E-07	3.30033E-09	2.19E-09	1.49477E-05	1.513E-05
U-238+D	2.2E-07	2.80112E-09	1.03E-06	1.89036E-05	2.016E-05
Totals	2.72E-06	1.47791E-08	7.3E-05	0.000270419	

Total risk per 1 pCi/g **0.000346**

From data in this table, it appears that the critical isotope of concern is Ra-226+D (contributing 45 % [0.0001555/0.000346] of total risk across all pathways), and the critical pathways are external gamma exposure (21 % [0.000073/0.000346] of total risk across all radionuclides) and consumption of produce grown in contaminated soil (78 % [0.000270/0.000346] of total risk across all radionuclides). Since our contaminant of concern is uranium ore, all of these contaminants are assumed to be in equilibrium, and therefore the total risk is the combined risk from all of the COCs. One can then calculate what the PRG of all of the COCs in equilibrium would be by dividing the total risk per pCi/g (0.000346) into the total acceptable risk. This value calculates to be 0.003 pCi/g for a risk of 1×10^{-6} , 0.3 pCi/g for a risk of 1×10^{-4} and 0.9 pCi/g for a risk of 3×10^{-4} .

3.4.3 Site-Specific Values and Residential Scenarios (Town and Rural)

The 2014 OSWER guidance specifically encourages the use of site-specific factors and parameters to more accurately quantify the risk from each unique site. The default values assume an infinitely large and thick contamination zone. It is likely that the actual abandoned mine sites will also be large, and for the Residential (Rural) scenario the area is assumed to be 20,000 m², or approximately 5 acres. For the Residential (Town) scenario, the contaminated area was

assumed to be 2,000 m² (0.5 acre) to account for a greater density of houses and other shielding infrastructure such as roads, sidewalks, parking lots, etc. Since these abandoned uranium mines are located in the arid high desert of the southwest U.S., it is logical to assume that the quantity of homegrown produce will be relatively small.

Town

In the assessment using default values above, the amount of fruits ingested was assumed to be 68.1 grams/day (g/day) during 6 years of childhood and 178.1 g/day during 20 years of adulthood, and for vegetables was assumed to be 41.7 g/day during childhood and 126.2 g/day during adulthood. For a residential (town) scenario, the site-specific amount assumed for each produce type for both adult and child was revised to 5.5 g/day which is equivalent to 2 kg/year, the value used in the EPA Region 6 Grants Mineral Belt Uranium Residential Assessments project. Assuming this modification to the default values, the PRG calculator generates the following table of risks per radionuclide.

Table 3-4. Risks Based on Site-Specific Residential (Town) Scenario

Isotope	Ingestion Risk per pCi/g	Inhalation Risk per pCi/g	External Exposure Risk per pCi/g	Produce Consumption Risk per pCi/g	Total Risk per pCi/G
Bi-210	2.05E-11	4.10E-14	1.47E-11	2.73E-11	6.24E-11
Pb-210	0.00000132	1.29E-09	7.93E-09	0.000000396	0.00000172
Po-210	7.70E-08	3.61E-11	7.13E-12	1.21E-08	8.91E-08
Ra-226+D	7.54E-07	3.32E-09	0.0000608	0.000000317	0.0000619
Th-230	1.86E-07	4.04E-09	7.02E-09	3.52E-08	0.000000232
U-234	1.66E-07	3.29E-09	2.19E-09	3.68E-08	0.000000208
U-238+D	2.21E-07	2.81E-09	8.80E-07	4.66E-08	0.00000115
Totals	0.00000272	1.48E-08	0.0000617	0.000000844	

Total Risk per 1 pCi/g 0.0000653

From these data, it appears that the only significant COC is Ra-226+D, and the only significant pathway is external gamma exposure (External Exposure to Ra-226 contributes 93% [0.0000608/0.0000653] of total risk). It is interesting to note that in the default scenario, the dust

load assumed for the soil inhalation pathway is $0.74 \mu\text{g}/\text{m}^3$. While this dust load may be a reasonable assumption for the default scenario, the dust load in the arid climate around a uranium mine would likely be greater than that assumed in the default scenario. Note however that in the site-specific scenario, with a climatic zone chosen as Albuquerque and a 5-acre area of contamination, the dust load for the soil inhalation pathway becomes ($0.22 \mu\text{g}/\text{m}^3$). However, for the inhalation pathway to become significant, the dust load would need to increase by a factor of 10,000. Therefore, it is concluded this pathway is not likely to be significant. Again, one can then calculate what the PRG of all of the COCs in equilibrium would be by dividing the total risk per pCi/g (0.0000653) into the total acceptable risk. This value calculates to be 4.6 pCi/g assuming a 3×10^{-4} risk.

Rural

For a Residential (Rural) scenario, in addition to increasing the contaminated area to $20,000 \text{ m}^2$, a PRG was calculated using the same input values as the Residential (Town) scenario save the following 2 parameters: the ingestion of fruits and vegetables was doubled for both child and adult to 11 g/day and the vegetative cover fraction was decreased by half to 0.25. A set of risks for each radioisotope and pathway was produced similar to Table 3-3 above and can be found in Appendix 1. The resulting PRG for an acceptable risk of 3×10^{-4} , along with pertinent input values and significant contributors to risk, are summarized on Table 3-2.

3.4.4 Site-Specific Values and Recreator (Backpacker) Scenario

The PRG calculator protocol does not include default values for a recreation scenario. This is because EPA believes that this scenario should be a unique set of input parameters from which the risk can be calculated. For an abandoned uranium mine site on federal land, the most likely use for recreation would be by a camper who resides on the property 24 hours/day for 14 days/year for 30 years. The area of contamination is again assumed to be $20,000 \text{ m}^2$, or approximately 5 acres. A set of risks for each radioisotope and pathway was produced can be found in Appendix 1. The resulting PRG for an acceptable risk of 3×10^{-4} , along with pertinent input values and significant contributors to risk, are summarized on Table 3-2.

3.4.5 Site-Specific Values and Recreator (Sheep Camp) Scenario

An additional potential scenario that one may encounter at an AUM site is the tradition of shepherds camping outdoors with grazing animals during prime grass-growing season. A conservative estimate is that a shepherd would camp for 5 months, or 153 days, per year (May – September) and consume sheep meat for 350 days (default residential annual exposure duration) out of the year. The input values for this scenario replicate those of the Recreator (Backpacker) scenario except for the annual exposure time in days per year increasing from 14 to 153 and the addition of a meat ingestion pathway with an annual exposure time of 350 days per year. A set of risks for each radioisotope and pathway was produced can be found in Appendix 1. The resulting PRG for an acceptable risk of 3×10^{-4} , along with pertinent input values and significant contributors to risk, are summarized on Table 3-2.

3.4.6 Site-Specific Values and Recreator (Hunter) Scenario

A third recreator-type scenario for which a PRG was developed was that of a hunter. The input values for this scenario replicate those of the Recreator (Backpacker) except that an additional pathway of exposure is added which accounts for the risk contribution from ingestion of game and fowl. Since the PRG Calculator does not include default values for a recreator scenario, ingestion rates for game and fowl along with game and fowl fodder and soil uptake rates were assumed to be identical to parallel values for beef and poultry in the PRG Farmer scenario. A set of risks for each radioisotope and pathway was produced and can be found in Appendix 1. The resulting PRG for an acceptable risk of 3×10^{-4} , along with pertinent input values and significant contributors to risk, are summarized on Table 3-2.

3.4.7 Site-Specific Values and Farmer Scenario

The PRG Calculator provides the option of modeling risk for a Farmer scenario in which numerous ingestion-of-animal products pathways of exposure can be considered in addition to the other standard pathways of exposure faced in a residential scenario. These include the ingestion of beef, poultry, eggs, dairy, fish and swine. Since several combinations of these pathways could be included or excluded which would provide varying PRGs, the risk to a farmer was not modeled and a PRG was not calculated. Instead, a PRG for a farmer scenario should be developed on a site-by-site basis with site-specific values.

3.4.8 Default Values and Indoor Worker Scenario

A PRG was developed for an Indoor Worker scenario using the PRG Calculator default values. The only 3 pathways of exposure considered under this scenario were ingestion of soil, inhalation of dust, and direct external gamma exposure. Default values for time of exposure included 8 hours per day (all indoors) and 250 days per year. A set of risks for each radioisotope and pathway considered was produced and can be found in Appendix 1. The resulting PRG for an acceptable risk of 3×10^{-4} , along with pertinent input values and significant contributors to risk, are summarized on Table 3-2.

3.4.9 Default Values and Outdoor Worker Scenario

A PRG was also developed for an Outdoor Worker scenario using the PRG Calculator default values. The pathways of exposure are identical to those of an indoor worker; however, default values for time of exposure differed and included 8 hours per day (all outdoors) and 225 days per year. A set of risks for each radioisotope and pathway considered was produced and can be found in Appendix 1. The resulting PRG for an acceptable risk of 3×10^{-4} , along with pertinent input values and significant contributors to risk, are summarized on Table 3-2.

3.5 CALCULATION OF RADIOLOGICAL THREAT ABATEMENT CRITERIA USING RESRAD 7

The June, 2014 EPA-issued OSWER 9285.6-20 guidance document states that although EPA recommends using the PRG calculator to model radionuclide risk to ensure consistency with CERCLA, the National Contingency Plan (NCP) and EPA's Superfund guidance for remedial sites, an alternative model may be used if justification is developed. Justification should include the model runs using both the recommended EPA PRG model and the alternative model.

Pursuant to this goal, although many other modeling programs are available, RESRAD 7 modeling software was also used to develop radiological threat abatement criteria for the 10 potential land-use scenarios described above for comparison to PRG Calculator results. RESRAD was utilized for the EPA Region 6 Grants Mineral Belt Uranium Home Site Assessments project that was conducted from 2010-2015, which is similar in scope to the Tronox Mine Site Assessments project. The RESidual RADioactivity code was developed by Argonne National Laboratory for the U.S. Department of Energy and calculates the Effective Dose

Equivalent (EDE) from each radionuclide through each pathway of concern. Using the OSWER 9285.6-20 guidance document risk-to-dose assumption of a risk of cancer incidence of 8.46×10^{-4} per rem of exposure per 30 years, a maximum allowable dose of 12 mrem/yr was used which is considered to correspond approximately to 3×10^{-4} excess lifetime cancer risk.

EDEs for the same COCs for unprocessed uranium ore as listed for the PRG Calculator were modeled across the pathways of exposure exclusive to each scenario, from which Derived Concentration Guideline Levels (DCGLs) were calculated. For the purposes of comparison, DCGL is considered synonymous with PRG. The associated progeny for parent radionuclides being defined slightly differently by the two different models, the COCs for RESRAD were U-238, U-234, Th-230, Ra-226, Po-210, Pb-210. PRG Calculator input values, including default values, for all parameters were replicated in RESRAD to the maximum extent possible to comport with OSWER 9285.6-20 guidance.

Similar to the PRG Calculator, if RESRAD is determined to be a useful model and if it is found that actual values vary significantly from the input values assumed for the calculations in this protocol, DCGL(s) should be redeveloped for the site(s) utilizing RESRAD 7 and the new site-specific input values.

Table 3-5 summarizes the input values, pathways of exposure, and calculated Soil DCGLs for each scenario at an acceptable maximum dose of 12 mrem/yr. The data were summarized from RESRAD outputs that are provided as Appendix 2.

It should be noted that unlike the PRG Calculator, RESRAD calculates the EDE from the radon inhalation pathway based on the concentration of Ra-226 in soil, and the pathway can be included or excluded as desired when modeling. Using the input values from the PRG residential (town)-scenario, the model calculated a total risk per pCi/g *exclusive to just* the radon inhalation pathway (excluding inhalation and ingestion of soil, direct exposure, and ingestion of home-grown produce pathways) from all radionuclides of 0.3 mrem/yr. Given the technical infeasibility of achieving cleanup to this conservative value, the cleanup criteria for the inhalation of Rn-222 will be the EPA-recommended action level of 4.0 pCi/L. Accordingly, the remainder of the DCGLs exclude the risk contribution from radon inhalation.

Table 3-5. DCGLs for Potential Scenarios at AUM Sites

PRG Scenario Replicated in RESRAD ₁	DCGL (pCi/g) (Assuming 12 mrem/yr Maximum Acceptable Dose) ₂	Contribution to Total Risk from Ra-226+D External Exposure	Total Exposure Duration	Routes of Exposure
Residential (with Radon Inhalation back-calculated to soil) ₃	0.3	n/a	26 (6 ch, 20 adlt) yrs 350 days/yr 24 hrs/day (16.41 hrs outdoors; 1.75 indoors)	Radon Inhalation
Residential - PRG Default Values	1.1	29% (62% of total risk is contributed by ingestion of soil)	26 (6 ch, 20 adlt) yrs 350 days/yr 24 hrs/day (16.41 hrs indoors; 1.75 outdoors)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil Ingestion of Home-grown Produce
Residential (Town)	3.1	82%	26 (6 ch, 20 adlt) yrs 350 days/yr 24 hrs/day (16.41 hrs indoors; 1.75 outdoors)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil Ingestion of Home-grown Produce
Residential (Rural) ₄	2.8	76%	26 (6 ch, 20 adlt) yrs 350 days/yr 24 hrs/day (16.41 hrs indoors; 1.75 outdoors)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil Ingestion of Home-grown Produce
Recreator (Backpacker)	31.4	98%	30 (6 ch, 20 adlt) yrs 14 days/yr 24 hrs/day	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil
Recreator (Sheep Camp)	2.7	94%	30 (6 ch, 20 adlt) yrs 153 days/yr (350 days for ingestion of sheep) 24 hrs/day	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil
Recreator (Hunter) ₅	12.0	38% (An additional 62% of total risk is contributed by ingestion of game)	30 (6 ch, 20 adlt) yrs 14 days/yr (350 days/yr for ingestion of game) 24 hrs/day	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil Ingestion of Game and Fowl
Farmer: Soil + Biota ₆	site-specific	site-specific	site-specific	site-specific
Indoor Worker	12.4	94%	25 years 250 days/yr 8 hrs/day (8 hrs indoors only)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil
Outdoor Worker	5.5	95%	25 years 225 days/yr 8 hrs/day (8 hrs outdoors only)	Direct Exposure to Soil Ingestion of Soil Inhalation of Soil

₁ The June, 2014 EPA-issued OSWER 9285.6-20, "Radiation Risk Assessment at CERCLA Sites: Q&A", the answer to question 16 states "... When alternative models are used, the user should adjust the default input parameters to be as close as possible to the PRG inputs." To this end, in addition to the Total Exposure Duration times and the Routes of Exposure listed in this Table, site-specific parameters used in PRG calculations that were replicated for all ResRad scenarios include a contaminated area of 20,000 m² (~5 acres)(except Residential [Town] scenario), cover layer above contamination of 0.0 cm, indoor Gamma Shielding Factor of 0.4, and Plant Food Contaminated Fraction of 0.25. For Residential (Town), the contaminated area was replicated as 2,000 m². Thickness of contamination zone in PRG calculations was unlimited; a 2 meter thickness was used to replicate this value for all scenarios in RESRAD.

Additionally, the following default values were calculated to be equivalent to those from the PRG Radioisotope Calculator: Since the PRG Calculator breaks out total exposure time into 6 years of childhood and remainder of adulthood for residential and recreator scenarios whereas RESRAD does not, the PRG default ingestion rates were multiplied out to obtain the average ingestion rate over total number of years.

Table 3-5. DCGLs for Potential Scenarios at AUM Sites (Continued)

RESRAD Parameters and Converted Default Values (Equivalent to PRG Default Values)		
Residential Inhalation Rate	6,192	m ³ /yr
Recreator (Backpacker, Hunter) Inhalation Rate	252	m ³ /yr
Recreator (Sheep Camp) Inhalation Rate	2,754	m ³ /yr
Indoor Worker Inhalation Rate	13,000	m ³ /yr
Outdoor Worker Inhalation Rate	13,500	m ³ /yr
^a Residential (Default) Soil Ingestion Rate	1044	g/yr
^a Residential (Town) Soil Ingestion Rate	82	g/yr
^a Residential (Rural) Soil Ingestion Rate	120	g/yr
^a Recreator (Backpacker, Hunter) Soil Ingestion Rate	2	g/yr
^a Recreator (Sheep Camp) Soil Ingestion Rate	18	g/yr
^a Indoor Worker Soil Ingestion Rate	13	g/yr
^a Outdoor Worker Soil Ingestion Rate	23	g/yr
Residential Indoor Time Fraction	0.66	unitless
Residential Outdoor Time Fraction	0.07	unitless
Recreator (Backpacker, Hunter) Time Fraction	0.04	unitless
Recreator (Sheep Camp) Time Fraction	0.42	unitless
Indoor Worker Time Fraction	0.23	unitless
Outdoor Worker Time Fraction	0.21	unitless
^b Fruit/Vegetable/Grain Consumption	34.0	kg/yr
^b Leafy Vegetable Consumption	11.3	kg/yr
^c Residential (Town) Fruit/Vegetable/Grain Consumption	1.9	kg/yr
^c Residential (Town) Leafy Vegetable Consumption	1.9	kg/yr
^c Residential (Rural) Fruit/Vegetable/Grain Consumption	3.9	kg/yr
^c Residential (Rural) Leafy Vegetable Consumption	3.9	kg/yr
^d Recreator (Hunter) Meat and Poultry Consumption	34.4	kg/yr
^d Recreator (Sheep Camp) Meat and Poultry Consumption	33.1	kg/yr
^d Recreator (Sheep Camp) Meat Contaminated Fraction	0.42	unitless
^e Recreator (Hunter) Livestock Fodder Intake	12.0	kg/day
^e Recreator (Hunter) Livestock Water Intake	64.3	liters/day
^e Recreator (Hunter) Livestock Soil Intake	0.4	kg/day
^e Recreator (Sheep Camp) Livestock Fodder Intake	3.9	kg/day
^e Recreator (Sheep Camp) Livestock Water Intake	32.0	liters/day
^e Recreator (Sheep Camp) Livestock Soil Intake	0.2	kg/day

^aSoil Ingestion Rates were calculated by setting the Mass Loading for Foliar Deposition and the Wet and Dry Foliar Interception Fractions to 0.0, and then adding the PRG soil ingestion rates to the amt of soil ingested from a PRG Produce Plant Mass Loading Factor of .01 (using PRG fruit and vegetable consumption rates).

^bPRG Calculator has default values for vegetable and fruit consumption only; therefore, the following assumptions were made: Total Fruit/Vegetable/Grain and Leafy Vegetable Consumption = Avg of Default PRG Vegetable and Fruit consumption. Fruit/Vegetable/Grain consumption was then assumed to be 75 % of total and Leafy Vegetable Consumption was assumed to be 25 % of total.

^cDefault values for Fruit and Vegetable Consumption were not used in the PRG Calculator; the values for each were changed to 2 kg/yr = 5.5 g/day for Residential (Town) scenario (which was used in the Grants Mineral Belt Uranium Residential Assessments project) and to 11.0 g/day for each for Residential (Rural) scenario.

^dFor the Recreator (Hunter) Scenario, this number represents the addition of game and fowl consumption. For the Recreator (Sheep) Scenario, this number represents consumption of sheep only.

^eReflects that sheep graze on contaminated land for 133 days (5 months) per year. Recreator (Hunter) Meat Contaminated Fraction was replicated as 1.0 as the game and fowl were assumed to graze on contaminated lands year-round.

^fFor the Recreator (Hunter) Scenario, this number represents the addition of game and fowl uptake rates. For the Recreator (Sheep) Scenario, this number represents uptake rates of sheep only.

^gEPA's current conversion from risk to dose = 8.46×10^{-4} per rem of exposure per 30 years. For a maximum allowable risk of 3×10^{-4} , this equates to 11.8 mrem/yr which is approximately equal to 12 mrem/yr.

^hPRG Calculator does not back-calculate to soil the risk contribution from radon inhalation but instead calculates risk per chosen concentration in air. Conversely, ResRad does back-calculate to soil the radon inhalation risk but does not calculate risk in air; therefore, this scenario is not replicating a PRG-calculated scenario. To replicate PRG, all scenarios in this table exclude radon inhalation pathway except this first scenario.

ⁱCould not input one-half the vegetative cover of the residential-town scenario as this parameter is not available in RESRAD to change. The difference between the Residential -Rural and Town scenarios is thus 1) the rural scenario employs double the town ingestion rate of fruits and vegetables, and 2) the town scenario employs a contaminated area of 2,000 m² versus 20,000 m² for rural scenario.

^jChanged Groundwater Fractional Usage for Livestock water and Irrigation water fractions to 0.0. Groundwater is generally very deep in the project location and is not a concern.

^kThe PRG Farmer Scenario includes several potential pathways including the consumption of home-grown produce and ingestion of home-raised beef, dairy, poultry, eggs, fish and swine that will likely vary significantly from site to site. Therefore, a site that includes a farm as present or future land use should have a PRG calculated with site-specific parameters.

3.6 SUMMARY

As stated previously in section 2.2.2, radiological threat abatements of radionuclides under CERCLA are governed by the risk range for all carcinogens established in the NCP when ARARs are not available or are not sufficiently protective. Abatement actions generally should achieve a level of risk within the 10^{-4} to 10^{-6} carcinogenic risk range based on the reasonable maximum exposure for an individual. While the upper end of the risk range is not a discrete line at 1×10^{-4} , EPA generally uses 10^{-4} in making risk management decisions, and 10^{-6} is considered a concentration where additional assessment is not warranted.

For example, PRG values are generally used as a starting point for initial protectiveness and are defined at a risk of 10^{-6} . They are generally not de facto abatement action levels. PRG concentrations are indicative of areas that do not require further federal attention. Action levels are generally based on 1×10^{-4} risk and are used to define areas that warrant a time critical removal action. Action levels are calculated at 10^{-4} to 10^{-6} risk range based on site-specific conditions and contaminants. Factors related to uncertainty and technical limitations may justify modification of the risk goal. The EPA has substantial history of accepting a radiological threat abatement action level for radionuclides of 3×10^{-4} risk, which in current OSWER guidance is considered equivalent to a dose of 12 mrem/y.

A summary of the scenarios evaluated above are as follows;

Table 3-6. Potential Radiological Threat Abatement Criteria

	Basis	1×10^{-6} risk	1×10^{-4} risk	3×10^{-4} risk	Zero risk
Midnite Mine	background				4.7 pCi/g
Churchrock Mine	Residential scenario		*1.24 pCi/g		
TENORM Technical Report-	14 day Recreational scenario	3.07 pCi/g	307 pCi/g		
PRG Calculator	10 Scenarios (See Table 3-2)			See Table 3-2	
RESRAD 7	10 Scenarios (See Table 3-5)			See Table 3-5	

*The 1.24 pCi/g cleanup level at Churchrock Mine was for 2×10^{-4} risk.

From these data, the following conclusions can be drawn regarding ARARs that are not developed using the PRG Calculator

- The primary contaminant is Ra-226+D
- Precedent acceptable criteria are in the range of 1.2 to 4.7 pCi/g of Ra-226+D
- Cleanup criteria assuming a residential scenario and an allowable risk of 1×10^{-6} will result in a concentration less than the typical background concentration for Ra-226.
- Cleanup criteria assuming a reasonable recreational scenario of 14 days and a soil cleanup level of 3.1 will result in a risk of about 1×10^{-6} .
- Precedent EPA acceptance of a 1×10^{-4} risk assuming a residential scenario will result in a radiological threat abatement action criterion of 1.24 pCi/g of Ra-226 in soil.
- These criteria address concentrations in soil only. Contributions to risk do not address contaminant concentrations in water.

PRG Calculator and RESRAD 7

Side-by-side PRG and DCGL values derived from the PRG Calculator and RESRAD 7 are illustrated here as Table 3-7. Screening-level equivalents in counts per minute (cpm) are included and are to be used with a 2"x2" sodium-iodide scintillator probe.

Table 3-7. Comparison of PRGs and DCGLs for 10 Potential Scenarios at UAM Sites

PRG Scenario	PRG		RESRAD	
	SOIL PRG (pCi/g) assuming 3x10E-4 Maximum Acceptable Risk	¹ SOIL PRG Scanning Equivalent (CPM) (2"x2" Probe)	SOIL DCGL (pCi/g) (Assuming 12 mrem/yr Maximum Acceptable Dose)	¹ SOIL DCGL Scanning Equivalent (CPM) (2"x2" Probe)
Radon Inhalation	7x10E-5 pCi/L	n/a	0.3	n/a
Residential - Default	0.9	1,334	1.1	1,630
Residential (Town)	4.6	6,817	3.1	4,594
Residential (Rural)	4.1	6,076	2.8	4,150
Recreator (Backpacker)	32.5	48,165	31.4	46,535
Recreator (Sheep Camp)	2.9	4,298	2.7	4,029
Recreator (Hunter): Soil + Game and Fowl	15.4	22,823	12.0	17,784
Farmer: Soil + Biota	site-specific	site-specific	site-specific	site-specific
Indoor Worker	16.3	24,157	12.4	18,377
Outdoor Worker	7.3	10,819	5.5	8,151

¹Using Microshield[®] software (gamma ray shielding and dose assessment modeling), the gamma exposure rate from widespread soil contamination at 2.0 pCi/g of Ra-226 is calculated to be 3.9 µR/h. MARSSIM table 6.7 provides the response of a 2x2 NaI detector as 760 cpm/µR/h from Ra-226.

PRG Calculator

- The primary contaminant is Ra-226+D.
- A radiological threat abatement criterion assuming an allowable risk of 1×10^{-6} will result in an acceptable soil concentration less than the typical background concentration for Ra-226.
- Precedent EPA acceptance of a 3×10^{-4} risk will result in soil radiological threat abatement action levels for Ra-226 ranging from 2.9 for a Recreator (Sheep Camp) scenario to 32.5 pCi/g for a Recreator (Backpacker) scenario.
- Radiological threat abatement action criteria for Rn-222 at a risk level of 3×10^{-4} or less will result in an acceptable concentration of Rn-222 in air that is orders of magnitude less than the EPA action level of 4.0 pCi/L.

RESRAD

- The primary contaminant is Ra-226+D.
- Precedent EPA acceptance of a 12 mrem/yr maximum TEDE will result in radiological threat abatement action levels for Ra-226 in soil ranging from 2.7 pCi/g for a Recreator (Sheep Camp) scenario to 31.4 pCi/g for a Recreator (Backpacker) scenario.
- Radiological threat abatement action criteria that allow a maximum TEDE of 12 mrem/yr and include the inhalation of Rn-222 will result in a soil DCGL below 1.0 pCi/g.
- RESRAD-derived DCGLs appear to be only slightly more conservative than PRGs for 3 of the 5 non-residential scenarios. The two exceptions are the Recreator (Hunter) scenario and the indoor worker, where the DCGLs decreased from the PRG values by approximately 22% and 24%, respectively. For the town and rural residential scenarios, the DCGLs are approximately two-thirds of the PRGs. The common characteristic of the residential and indoor worker scenarios is the inclusion of an ‘indoor’ component, and it appears that given the limited and varying available parameters between the two models for user input, the models diverge more strongly when considering risk and EDE from time spent indoors.

3.6.1 Conclusions

The PRG Calculator will be the primary model used to develop radiological threat abatement criteria for the Tronox AUMs at a maximum acceptable risk of 3×10^{-4} . **It is important to note that there will not be one single PRG for all assessed AUMs; instead, individual site PRGs must be developed based on present and likely future land-use scenarios and site-specific input parameters.**

To this end, PRGs have been developed for 10 potential scenarios for this risk level and are provided in Table 3-2. Note that although an effort was made to select reasonable input parameters for conditions likely to be met on AUM sites in EPA Regions 6 and 9, **each site must**

be evaluated individually prior to assessment to determine not only the present and likely future land use scenario, but to also confirm whether the site-specific input parameters used for the PRG calculations in this protocol are appropriate for the subject site. If it is found that appropriate input parameters vary significantly from those used, new PRG(s) should be calculated for the site(s) using an approach that is consistent with guidance in this document. The use of RESRAD 7 to model risk at these AUM sites can be acceptable on a site-specific basis provided clear justification is provided as to why an alternative to the PRG calculator is warranted. Consistent with the 2014 OSWER guidance, the radiological threat abatement levels exclude contribution from background. The appropriate area-specific background concentration(s) of the radionuclides of concern must be determined and those values added to the PRG in order to attain a value for the total acceptable concentration in soil at the site.

It must also be noted that there may be some individual state, local, or tribal regulations that may apply and would call for lower radiological threat abatement criteria. State, local, and tribal regulations can be more conservative than the OSWER guidance, but cannot be less conservative.

4. DATA COLLECTION AND INTERPRETATION

The preceding section addressed EPA precedent cleanup criteria for sites similar to the Tronox AUM sites and to established guidelines for calculating risk-based radiological threat abatement action criteria. This section provides guidelines to ensure a consistent approach to field data collection and data interpretation at sites where assessment or abatement activities are conducted. The instrument measurements to be performed, types of samples to be collected, analytical methods to be applied, numbers of samples or measurements required to statistically determine if the abatement criteria are met, and the statistical tests to be applied to the data are described in Appendix 3.

4.1 MARSSIM - PRIMARY GUIDANCE DOCUMENT

The Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) will be utilized to develop the radiation survey protocol (NRC, 2002). This document was prepared collaboratively by four Federal agencies having authority and control over radioactive materials: EPA, NRC, DOE, and Department of Defense (DOD). The MARSSIM, published in 2000, provides a nationally consistent consensus approach to conducting radiation surveys and investigations at potentially contaminated sites. In addition to planning, conducting, and assessing radiological surveys of surface soils and building surfaces, the document provides a decision-making process to determine if site conditions are in compliance with dose-based or risk-based regulatory criteria. As illustrated in Figure 4-1, the demonstration of compliance with respect to conducting surveys is comprised of three interrelated parts.

Translate: Relating the acceptable risk to a corresponding radiological threat abatement criterion using pathway modeling. This task is **not** within the scope of MARSSIM.

Measure: Acquiring scientifically defensible, site-specific data on the levels and distribution of contamination by employing suitable field or laboratory measurement techniques.

Decide: Determining that the data obtained from sampling supports the assertion that the site meets the risk criterion, within an acceptable degree of uncertainty, through application of a statistically based decision rule.

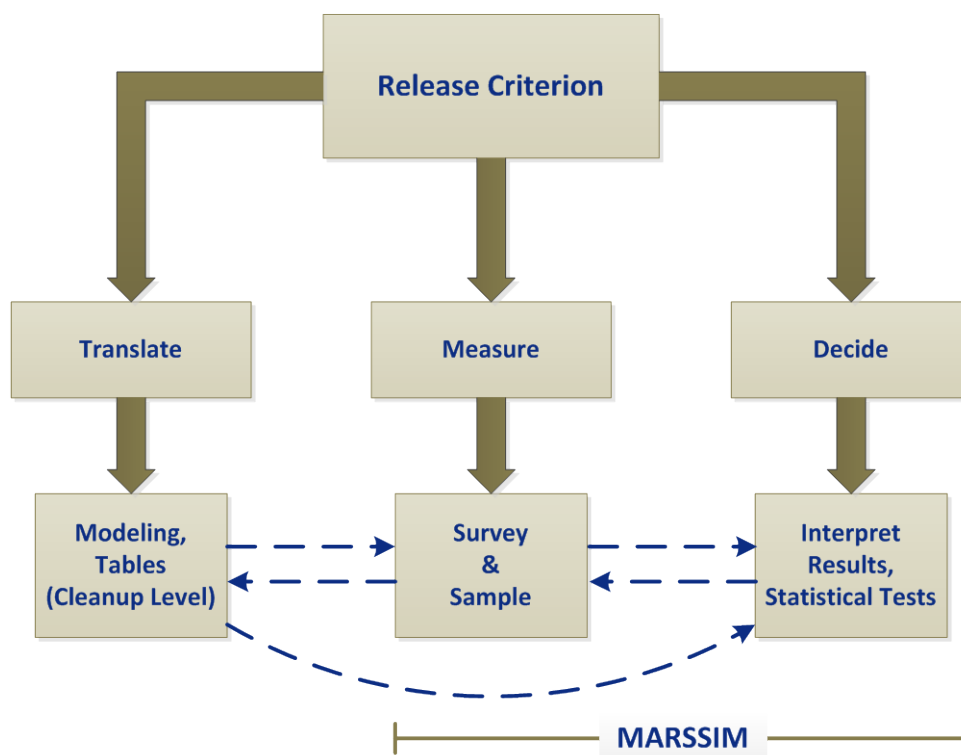


Figure 4-1 Compliance Demonstration

Note that development or calculation of the radiological threat abatement action criterion is not within the scope of MARSSIM. The evaluation of surface water, groundwater, air particulates, radon, radon progeny, or gamma exposure rates is also not within the scope of MARSSIM.

4.2 MARSSIM VERSUS THE CERCLA RADIOLOGICAL THREAT ABATEMENT PROCESS

The CERCLA Radiological threat abatement Process defined in 40 Code of Federal Regulations (CFR) 300.415 (NCP subpart E-Hazardous substance Response) establishes methods and criteria for determining the extent of response when there is a release into the environment of a hazardous substance or any pollutant that may represent an imminent and substantial danger to the public health or welfare. The survey designs and statistical tests for relatively uniform distributions of radioactivity discussed in MARSSIM are also discussed in CERCLA guidelines. However, MARSSIM includes scanning for radioactive materials, which is not discussed in the more general CERCLA guidelines. MARSSIM is not intended to replace or conflict with existing CERCLA guidelines, but is intended to provide supplemental guidance for specific situations involving radioactive contamination.

The radiological threat abatement process is generally composed of four distinct steps: 1) site referral; 2) preliminary assessment; 3) extent of contamination; and 4) removal action. The scope of this protocol, hereinafter referred to as the Abandoned Uranium Mine Site Assessment (AUMSA) will address steps 2, 3 and 4, as referenced above and is included as Appendix 3. The AUMSA protocol has been designed to be conducted in three phases in order to be consistent with EPA policy and generally consistent with MARSSIM protocols. The Preliminary Assessment, which is equivalent to the MARSSIM Scoping Survey, will be conducted on all mine site areas within the defined area of interest. If elevated radiological contamination above background is detected at a mine site, the AUMSA protocol will transition to the Extent-of-Contamination step, which is comparable to a MARSSIM Characterization Survey, to define the levels and extent of radiological contamination to allow for planning the abatement activities. Alternatively, if abatement activities are not warranted, data from the Characterization Survey will be of sufficient quality and quantity to demonstrate that the site meets the release criteria without further action. After the radiological threat abatement activities are completed, a Final Status Survey will be performed to document the post cleanup status of the site and attainment of the project goals.

5. REFERENCES

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APPENDIX 1

Preliminary Remediation Goal (PRG) Calculator Risk Modeling Output

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Residential Scenario - Radon Inhalation Only

**Site-Specific
Resident Equation Inputs for Ambient Air**

Variable	Value
TR (target cancer risk) unitless	0.0003
ED _r (exposure duration - resident) yr	26
t _r (time - resident) yr	26
ET _r (exposure time - resident) hr	24
ET _{r-c} (exposure time - resident child) hr	24
ET _{r-a} (exposure time - resident adult) hr	24
EF _r (exposure frequency) day/yr	350
EF _{r-c} (exposure frequency - resident child) day/yr	350
EF _{r-a} (exposure frequency - resident adult) day/yr	350
ED _{r-c} (exposure duration - resident child) yr	6
ED _{r-a} (exposure duration - resident adult) yr	20
IRA _{r-a} (inhalation rate - resident adult) m ³ /day	20
IRA _{r-c} (inhalation rate - resident child) m ³ /day	10
IFA _{r-adj} (age-adjusted inhalation factor) m ³	161000
GSF _a (gamma shielding factor - air) unitless	1

Output generated 24MAR2015:15:41:47

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Residential Scenario - Radon Inhalation Only (continued)

Site-Specific
Resident RISK for Ambient Air

Isotope	ICRP Lung Absorption Type	Concentration (pCi/m ³)	Inhalation Slope Factor (risk/pCi)	Submersion External Exposure Slope Factor (risk/yr per pCi/m ³)	Inhalation Risk	External Exposure Risk	Total Risk	Inhalation Risk (no decay)	External Exposure Risk (no decay)	Total Risk (no decay)
Ra-226+D	M	1	2.82E-08	7.74E-09	0.00451	0.000000192	0.00451	0.00454	0.000000193	0.00454
<i>*Total Risk</i>		-	-	-	<i>0.00451</i>	<i>0.000000192</i>	<i>0.00451</i>	<i>0.00454</i>	<i>0.000000193</i>	<i>0.00454</i>

Output generated 24MAR2015:15:41:47

PRG = 0.07 pCi/m3

PRG = 0.00007 pCi/L

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Residential Scenario - Default Values

Default
Resident Equation Inputs for Soil

Variable	Value
TR (target cancer risk) unitless	0.000001
t_r (time - resident) yr	26
ED _r (exposure duration - resident) yr	26
ET _r (exposure time - resident) hr/day	24
ET _{r-c} (exposure time - resident child) hr/day	24
ET _{r-a} (exposure time - resident adult) hr/day	24
ET _{r-i} (exposure time - indoor resident) hr/day	16.416
ET _{r-o} (exposure time - outdoor resident) hr/day	1.752
ED _{r-c} (exposure duration - resident child) yr	6
ED _{r-a} (exposure duration - resident adult) yr	20
EF _r (exposure frequency - resident) day/yr	350
EF _{r-c} (exposure frequency - resident child) day/yr	350
EF _{r-a} (exposure frequency - resident adult) day/yr	350
IRS _{r-a} (soil intake rate - resident adult) mg/day	100
IRS _{r-c} (soil intake rate - resident child) mg/day	200
IRA _{r-a} (inhalation rate - resident adult) m ³ /day	20
IRA _{r-c} (inhalation rate - resident child) m ³ /day	10
IFS _{r-adj} (age-adjusted soil ingestion factor - resident) mg	1120000
IFA _{r-adj} (age-adjusted soil inhalation factor - resident) m ³	161000
GSF _i (gamma shielding factor - indoor) unitless	0.4
MLF (produce plant mass loading factor) unitless	0.26
IRF _{r-a} (fruit consumption rate - resident adult) g/day	178.1
IRF _{r-c} (fruit consumption rate - resident child) g/day	68.1
IRV _{r-a} (vegetable consumption rate - resident adult) g/day	126.2
IRV _{r-c} (vegetable consumption rate - resident child) g/day	41.7
IFV _{r-adj} (age-adjusted vegetable ingestion factor - resident) g	970970
IFF _{r-adj} (age-adjusted fruit ingestion factor - resident) g	1389710
CPF _r (contaminated plant fraction) unitless	0.25
CF _{fish} (contaminated fish fraction) unitless	1
IRF _a (fish intake rate - adult) g/day	54
TR (target cancer risk) unitless	0.000001
EF _r (exposure frequency - resident) day/yr	350
ED _r (exposure duration - resident) yr	26
City (Climate Zone) PEF Selection	Default
A _s / (acres) PEF Selection	0.5
Q/C _{wp} / inverse of the ratio of the geometric mean air concentration to the emission flux at center of a square source (g/m ² -s per kg/m ³) PEF Selection	93.77
V / fraction of vegetative cover (unitless)	0.5
U _m / mean annual wind speed (m/s)	4.69
U _t / equivalent threshold value (m/s)	11.32
F(x) / function dependant on U _m /U _t derived using Cowherd et al. (1985) (unitless)	0.194
PEF (particulate emission factor) m ³ /kg	1359344438
A (Dispersion Constant)	16.2302
B (Dispersion Constant)	18.7762
C (Dispersion Constant)	216.108
City (Climate Zone) VF Selection	Default
A _s / (acres) VF Selection	0.5
Q/C _{vol} / inverse of the ratio of the geometric mean air concentration to the emission flux at center of a square source (g/m ² -s per kg/m ³) VF Selection	68.18
foc / (fraction organic carbon in soil) g/g	0.006
ρ _b / (dry soil bulk density) g/cm ³	1.5
ρ _s / (soil particle density) g/cm ³	2.65
θ _w / (water-filled soil porosity) L _{water} /L _{soil}	0.15
T / (exposure interval) s	950000000
A (VF Dispersion Constant)	11.911
B (VF Dispersion Constant)	18.4385
C (VF Dispersion Constant)	209.7845

Output generated 13MAR2015:10:40:38

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Residential Scenario - Default Values (Continued)

Default

Resident PRGs for Soil

Isotope	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Particulate Emission or Volatilization factor (m ³ /kg)	Lambda	Half-life (years)	Default Soil Volume Area Correction Factor	Default Soil Volume Gamma Shielding Factor	Wet Soil-to-plant transfer factor (L/kg)	Ingestion PRG (pCi/g)	Inhalation PRG (pCi/g)	External Exposure PRG (pCi/g)	Produce Consumption PRG (pCi/g)	Total PRG (pCi/g)	Total PRG (mg/kg)
Bi-210	M	4.55E-10	2.77E-09	1.30E-11	2.40E-11	1.36E+09	5.05E+01	1.37E-02	1.00E+00	1.00E+00	1.00E-01	4.88E+04	2.43E+07	5.49E+04	4.74E+02	4.66E+02	3.76E-09
Pb-210	M	1.59E-08	1.48E-09	1.18E-09	1.72E-09	1.36E+09	3.12E-02	2.22E+01	1.00E+00	1.00E+00	9.57E-03	7.59E-01	7.77E+02	1.14E+02	7.80E-03	7.72E-03	1.01E-10
Po-210	M	1.45E-08	4.51E-11	2.25E-09	3.27E-09	1.36E+09	1.83E+00	3.79E-01	1.00E+00	1.00E+00	2.09E-04	1.30E+01	2.77E+04	1.22E+05	1.37E-01	1.36E-01	3.03E-11
Ra-226+D	M	2.82E-08	8.37E-06	5.14E-10	6.77E-10	1.36E+09	4.33E-04	1.60E+03	1.00E+00	1.00E+00	1.48E-02	1.33E+00	3.01E+02	1.39E-02	1.21E-02	6.43E-03	6.51E-09
Th-230	S	3.41E-08	8.45E-10	1.19E-10	1.66E-10	1.36E+09	9.19E-06	7.54E+04	1.00E+00	1.00E+00	1.83E-03	5.38E+00	2.48E+02	1.37E+02	5.43E-02	5.37E-02	2.61E-06
U-234	M	2.78E-08	2.53E-10	9.55E-11	1.48E-10	1.36E+09	2.82E-06	2.46E+05	1.00E+00	1.00E+00	5.39E-03	6.02E+00	3.03E+02	4.57E+02	6.69E-02	6.61E-02	1.06E-05
U-238+D	M	2.37E-08	1.19E-07	1.21E-10	1.97E-10	1.36E+09	1.55E-10	4.47E+09	1.00E+00	1.00E+00	5.39E-03	4.54E+00	3.57E+02	9.72E-01	5.29E-02	4.96E-02	1.48E-01

Output generated 13MAR2015:10:40:38

Isotope	Ingestion Risk per pCi/g	Inhalation Risk per pCi/g	External Exposure Risk per pCi/g	Produce Consumption Risk per pCi/g	Total Risk per pCi/g
Bi-210	2.05E-11	4.11523E-14	1.82E-11	2.1097E-09	2.146E-09
Pb-210	1.32E-06	1.287E-09	8.77E-09	0.000128205	1.295E-04
Po-210	7.69E-08	3.61011E-11	8.2E-12	7.29927E-06	7.353E-06
Ra-226+D	7.52E-07	3.32226E-09	7.19E-05	8.26446E-05	1.555E-04
Th-230	1.86E-07	4.03226E-09	7.3E-09	1.84162E-05	1.862E-05
U-234	1.66E-07	3.30033E-09	2.19E-09	1.49477E-05	1.513E-05
U-238+D	2.2E-07	2.80112E-09	1.03E-06	1.89036E-05	2.016E-05

Total risk per 1 pCi/g **0.000346**

From above, total risk per pCi/g = 3.46×10^{-4}

So $(1 \times 10^{-6} \text{ acceptable risk}) \div (3.46 \times 10^{-4} \text{ risk per pCi/g}) =$ **0.00289 pCi/g** PRG =

So for 3×10^{-4} acceptable risk, this becomes = **0.9 pCi/g** PRG =

Ra-226+D, external exposure, represents	0.21	of total risk
Ra-226+D, all pathways, represents	0.45	of total risk
Pb-210, produce ingestion, represents	0.37	of total risk

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Residential Scenario - Residential - Town

Site-Specific
Resident Equation Inputs for Soi

Variable	Value
TR (target cancer risk) unitless	0.0003
t_r (time - resident) yr	26
ED _r (exposure duration - resident) yr	26
ET _{r-c} (exposure time - resident child) hr/day	24
ET _{r-a} (exposure time - resident adult) hr/day	24
ET _{r-i} (exposure time - indoor resident) hr/day	16.416
ET _{r-o} (exposure time - outdoor resident) hr/day	1.752
ED _{r-c} (exposure duration - resident child) yr	6
ED _{r-a} (exposure duration - resident adult) yr	20
EF _r (exposure frequency - resident) day/yr	350
EF _{r-c} (exposure frequency - resident child) day/yr	350
EF _{r-a} (exposure frequency - resident adult) day/yr	350
IRS _{r-a} (soil intake rate - resident adult) mg/day	100
IRS _{r-c} (soil intake rate - resident child) mg/day	200
IRA _{r-a} (inhalation rate - resident adult) m ³ /day	20
IRA _{r-c} (inhalation rate - resident child) m ³ /day	10
IFS _{r-adj} (age-adjusted soil ingestion factor - resident) mg	1120000
IFA _{r-adj} (age-adjusted soil inhalation factor - resident) m ³	161000
GSF _i (gamma shielding factor - indoor) unitless	0.4
MLF (produce plant mass loading factor) unitless	0.01
IRF _{r-a} (fruit consumption rate - resident adult) g/day	5.5
IRF _{r-c} (fruit consumption rate - resident child) g/day	5.5
IRV _{r-a} (vegetable consumption rate - resident adult) g/day	5.5
IRV _{r-c} (vegetable consumption rate - resident child) g/day	5.5
IFV _{r-adj} (age-adjusted vegetable ingestion factor - resident) g	50050
IFF _{r-adj} (age-adjusted fruit ingestion factor - resident) g	50050
CPF _r (contaminated plant fraction) unitless	0.25
City (Climate Zone) PEF Selection	Albuquerque, NM
A _s / (acres) PEF Selection	5
Q/C _{wp} / inverse of the ratio of the geometric mean air concentration to the emission flux at center of a square source (g/m ² -s per kg/m ³) PEF Selection	55.22649302
V / fraction of vegetative cover (unitless)	0.5
U _m / mean annual wind speed (m/s)	4.02
U _t / equivalent threshold value (m/s)	11.32
F(x) / function dependant on U _m /U _t derived using Cowherd et al. (1985) (unitless)	0.0553
PEF (particulate emission factor) m ³ /kg	4459780162
A (Dispersion Constant)	14.9421
B (Dispersion Constant)	17.9869
C (Dispersion Constant)	205.1782

Output generated 18MAY2015:14:28:53

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Residential Scenario - Residential - Town (Continued)

Soil Ingestion Slope Factor (risk/pCi)	Concentration (pCi/g)	Particulate Emission or Volatilization factor (m ³ /kg)	Lambda	Halflife (years)	2000 m ² Soil Volume Area Correction Factor	cm Soil Volume Gamma Shielding Factor	Wet Soil-to-plant transfer factor (pCi/g-fresh plant per pCi/g-wet soil)	Ingestion Risk	Inhalation Risk	External Exposure Risk	Produce Consumption Risk	Total Risk
2.40E-11	1	4.46E+09	5.05E+01	1.37E-02	8.04E-01	1.00E+00	1.00E-01	2.05E-11	1.25E-14	1.47E-11	2.73E-11	6.24E-11
1.72E-09	1	4.46E+09	3.12E-02	2.22E+01	9.05E-01	1.00E+00	9.57E-03	0.00000132	3.93E-10	7.93E-09	0.000000396	0.00000172
3.27E-09	1	4.46E+09	1.83E+00	3.79E-01	8.70E-01	1.00E+00	2.09E-04	7.7E-08	1.1E-11	7.13E-12	1.21E-08	8.91E-08
6.77E-10	1	4.46E+09	4.33E-04	1.60E+03	8.46E-01	1.00E+00	1.48E-02	7.54E-07	1.01E-09	0.0000608	0.000000317	0.0000619
1.66E-10	1	4.46E+09	9.19E-06	7.54E+04	9.62E-01	1.00E+00	1.83E-03	1.86E-07	1.23E-09	7.02E-09	3.52E-08	2.29E-07
1.48E-10	1	4.46E+09	2.82E-06	2.46E+05	1.00E+00	1.00E+00	5.39E-03	1.66E-07	1E-09	2.19E-09	3.68E-08	2.06E-07
1.97E-10	1	4.46E+09	1.55E-10	4.47E+09	8.56E-01	1.00E+00	5.39E-03	2.21E-07	8.56E-10	8.8E-07	4.66E-08	0.00000115
-	-	-	-	-	-	-	-	0.00000272	4.51E-09	0.0000617	0.000000844	0.0000653

PRG = 4.6 pCi/g

Ra-226+D, external exposure, represents 93 % of total risk

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Residential Scenario - Residential - Rural

Variable	Value
TR (target cancer risk) unitless	0.0003
t_r (time - resident) yr	26
ED_r (exposure duration - resident) yr	26
ET_{r-c} (exposure time - resident child) hr/day	24
ET_{r-a} (exposure time - resident adult) hr/day	24
ET_{r-i} (exposure time - indoor resident) hr/day	16.416
ET_{r-o} (exposure time - outdoor resident) hr/day	1.752
ED_{r-c} (exposure duration - resident child) yr	6
ED_{r-a} (exposure duration - resident adult) yr	20
EF_r (exposure frequency - resident) day/yr	350
EF_{r-c} (exposure frequency - resident child) day/yr	350
EF_{r-a} (exposure frequency - resident adult) day/yr	350
IRS_{r-a} (soil intake rate - resident adult) mg/day	100
IRS_{r-c} (soil intake rate - resident child) mg/day	200
IRA_{r-a} (inhalation rate - resident adult) m ³ /day	20
IRA_{r-c} (inhalation rate - resident child) m ³ /day	10
IFS_{r-adj} (age-adjusted soil ingestion factor - resident) mg	1120000
IFA_{r-adj} (age-adjusted soil inhalation factor - resident) m ³	161000
GSF_i (gamma shielding factor - indoor) unitless	0.4
MLF (produce plant mass loading factor) unitless	0.01
IRF_{r-a} (fruit consumption rate - resident adult) g/day	11
IRF_{r-c} (fruit consumption rate - resident child) g/day	11
IRV_{r-a} (vegetable consumption rate - resident adult) g/day	11
IRV_{r-c} (vegetable consumption rate - resident child) g/day	11
IFV_{r-adj} (age-adjusted vegetable ingestion factor - resident) g	100100
IFF_{r-adj} (age-adjusted fruit ingestion factor - resident) g	100100
CPF_r (contaminated plant fraction) unitless	0.25
City (Climate Zone) PEF Selection	Albuquerque, NM
A_s / (acres) PEF Selection	5
Q/C_{wp} / inverse of the ratio of the geometric mean air concentration to the emission flux at center of a square source (g/m ² -s per kg/m ³) PEF Selection	55.22649302
V / fraction of vegetative cover (unitless)	0.25
U_m / mean annual wind speed (m/s)	4.02
U_t / equivalent threshold value (m/s)	11.32
$F(x)$ / function dependant on U_m/U_t derived using Cowherd et al. (1985) (unitless)	0.0553
PEF (particulate emission factor) m ³ /kg	2973186774
A (Dispersion Constant)	14.9421
B (Dispersion Constant)	17.9869
C (Dispersion Constant)	205.1782

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Residential Scenario - Residential - Rural (Continued)

Isotope	ICRP Lung Absorption Type	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Concentration (pCi/g)	Particulate Emission or Volatilization factor (m ³ /kg)	Lambda	Half-life (years)	20001 m ² Soil Volume Area Correction Factor	cm Soil Volume Gamma Shielding Factor	Wet Soil-to-plant transfer factor (pCi/g-fresh plant per pCi/g-wet soil)	Ingestion Risk	Inhalation Risk	External Exposure Risk	Produce Consumption Risk	Total Risk
Bi-210	M	M	4.55E-10	2.77E-09	1.30E-11	2.40E-11	1	2.97E+09	5.05E+01	1.37E-02	8.67E-01	1.00E+00	1.00E-01	2.05E-11	1.88E-14	1.58E-11	5.47E-11	9.1E-11
Pb-210	M	M	1.59E-08	1.48E-09	1.18E-09	1.72E-09	1	2.97E+09	3.12E-02	2.22E+01	9.46E-01	1.00E+00	9.57E-03	0.00000132	5.89E-10	8.31E-09	0.000000789	0.00000212
Po-210	M	M	1.45E-08	4.51E-11	2.25E-09	3.27E-09	1	2.97E+09	1.83E+00	3.79E-01	9.36E-01	1.00E+00	2.09E-04	7.72E-08	1.65E-11	7.67E-12	2.42E-08	0.000000101
Ra-226+D	M	M	2.82E-08	8.37E-06	5.14E-10	6.77E-10	1	2.97E+09	4.33E-04	1.60E+03	9.38E-01	1.00E+00	1.48E-02	7.54E-07	1.52E-09	0.00000674	0.000000635	0.0000688
Th-230	S	S	3.41E-08	8.45E-10	1.19E-10	1.66E-10	1	2.97E+09	9.19E-06	7.54E+04	1.00E+00	1.00E+00	1.83E-03	1.86E-07	1.85E-09	7.3E-09	7.05E-08	0.000000266
U-234	M	M	2.78E-08	2.53E-10	9.55E-11	1.48E-10	1	2.97E+09	2.82E-06	2.46E+05	1.00E+00	1.00E+00	5.39E-03	1.66E-07	1.51E-09	2.19E-09	7.35E-08	0.000000243
U-238+D	M	M	2.37E-08	1.19E-07	1.21E-10	1.97E-10	1	2.97E+09	1.55E-10	4.47E+09	9.70E-01	1.00E+00	5.39E-03	0.00000022	1.28E-09	0.000000998	9.29E-08	0.00000131
<i>Risk</i>			-	-	-	-	-	-	-	-	-	-	-	2.72E-06	6.76E-09	0.0000685	0.00000169	0.0000729

Output generated 12MAY2015:10:19:29

PRG = 4.1 pCi/g

Ra-226+D, external exposure, represents 92 % of of total risk

Appendix 1

Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output

Recreator Scenario - Backpacker

Site-Specific Recreator Equation Inputs for Soil

Variable	Value
TR (target cancer risk) unitless	0.0003
t_{rec} (time - recreator) yr ¹	30
ED _{rec} (exposure duration - recreator) yr ²	30
ED _{recs-c} (exposure duration - recreator child) yr	6
ED _{recs-a} (exposure duration - recreator adult) yr	24
ET _{rec} (exposure time - recreator) hr/day	24
ET _{recs-c} (exposure time - recreator) hr/day	24
ET _{recs-a} (exposure time - recreator) hr/day	24
EF _{rec} (exposure frequency - recreator) day/yr ³	14
EF _{recs-c} (exposure frequency - recreator child) day/yr ³	14
EF _{recs-a} (exposure frequency - recreator adult) day/yr ³	14
IFS _{rec-adj} (age-adjusted soil intake rate - recreator) mg	50400
IRS _{recs-c} (soil intake rate - recreator child) mg/day	200
IRS _{recs-a} (soil intake rate - recreator adult) mg/day	100
IFA _{rec-adj} (age-adjusted inhalation rate - recreator) m ³	7560
IRA _{recs-c} (inhalation rate - recreator child) m ³ /day	10
IRA _{recs-a} (inhalation rate - recreator adult) m ³ /day	20
City (Climate Zone) PEF Selection	Albuquerque, NM
A _s / (acres) PEF Selection	5
Q/C _{wp} / inverse of the ratio of the geometric mean air concentration to the emission flux at center of a square source (g/m ² -s per kg/m ³) PEF Selection	55.22649302
V / fraction of vegetative cover (unitless)	0.5
U _m / mean annual wind speed (m/s)	4.02
U _t / equivalent threshold value (m/s)	11.32
F(x) / function dependant on U _m /U _t derived using Cowherd et al. (1985) (unitless)	0.0553
PEF (particulate emission factor) m ³ /kg	4459780162
A (Dispersion Constant)	14.9421
B (Dispersion Constant)	17.9869
C (Dispersion Constant)	205.1782

Output generated 24MAR2015:11:34:55

- 1 Chosen to be between default residential value of 26 yrs and default farmer value of 40 yrs
- 2 Chosen to be between default residential value of 26 yrs and default farmer value of 40 yrs
- 3 Common maximum time the National Park Service issues backcountry permits

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Recreator Scenario - Backpacker (Continued)

**Site-Specific
Recreator RISK for Soil**

Isotope	ICRP Lung Absorption Type	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Soil Ingestion Slope Factor (risk/pCi)	Concentration (pCi/g)	Particulate Emission or Volatilization factor (m ³ /kg)	Lambda	Half-life (years)	20001 m ² Soil Volume Area Correction Factor	cm Soil Volume Gamma Shielding Factor	Ingestion Risk	Inhalation Risk	External Exposure Risk	Total Risk
Bi-210	M	M	4.55E-10	2.77E-09	2.40E-11	1	4.46E+09	5.05E+01	1.37E-02	8.67E-01	1.00E+00	7.98E-13	5.09E-16	1.82E-12	2.62E-12
Pb-210	M	M	1.59E-08	1.48E-09	1.72E-09	1	4.46E+09	3.12E-02	2.22E+01	9.46E-01	1.00E+00	5.63E-08	1.75E-11	1.05E-09	5.74E-08
Po-210	M	M	1.45E-08	4.51E-11	3.27E-09	1	4.46E+09	1.83E+00	3.79E-01	9.36E-01	1.00E+00	3E-09	4.48E-13	8.85E-13	3E-09
Ra-226+D	M	M	2.82E-08	8.37E-06	6.77E-10	1	4.46E+09	4.33E-04	1.60E+03	9.38E-01	1.00E+00	3.39E-08	4.75E-11	0.00000897	9.01E-06
Th-230	S	S	3.41E-08	8.45E-10	1.66E-10	1	4.46E+09	9.19E-06	7.54E+04	1.00E+00	1.00E+00	8.37E-09	5.78E-11	9.72E-10	9.4E-09
U-234	M	M	2.78E-08	2.53E-10	1.48E-10	1	4.46E+09	2.82E-06	2.46E+05	1.00E+00	1.00E+00	7.46E-09	4.71E-11	2.91E-10	7.8E-09
U-238+D	M	M	2.37E-08	1.19E-07	1.97E-10	1	4.46E+09	1.55E-10	4.47E+09	9.70E-01	1.00E+00	9.93E-09	4.02E-11	1.33E-07	1.43E-07
Risk			-	-	-	-	-	-	-	-	-	1.19E-07	2.11E-10	0.00000911	9.23E-06

Output generated 24MAR2015:11:34:55

PRG = 32.5 pCi/g

Ra-226+D, external exposure, represent: 97 % of total risk

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Recreator Scenario - Sheep Camp

Site-Specific
Recreator Equation Inputs for Soil

Variable	Value
TR (target cancer risk) unitless	0.0003
t_{rec} (time - recreator) yr	30
ED _{rec} (exposure duration - recreator) yr	30
ED _{rec-c} (exposure duration - recreator child) yr	6
ED _{recs-a} (exposure duration - recreator adult) yr	24
ET _{rec} (exposure time - recreator) hr/day	24
ET _{recs-c} (exposure time - recreator) hr/day	24
ET _{recs-a} (exposure time - recreator) hr/day	24
EF _{rec} (exposure frequency - recreator) day/yr	153
EF _{recs-c} (exposure frequency - recreator child) day/yr	153
EF _{recs-a} (exposure frequency - recreator adult) day/yr	153
IFS _{rec-adj} (age-adjusted soil intake rate - recreator) mg	550800
IRS _{recs-c} (soil intake rate - recreator child) mg/day	200
IRS _{recs-a} (soil intake rate - recreator adult) mg/day	100
IFA _{rec-adj} (age-adjusted inhalation rate - recreator) m ³	82620
IRA _{recs-c} (inhalation rate - recreator child) m ³ /day	10
IRA _{recs-a} (inhalation rate - recreator adult) m ³ /day	20
TR (target cancer risk) unitless	0.0003
ED _{rec} (exposure duration - recreator) yr	30
EF _{rec} (exposure frequency - recreator) day/yr	153
IRGF _{rec} (land game consumption rate) g/day	151.8
IRGL _{rec} (fowl consumption rate) g/day	.
CF _{rec-ga} (game contaminated fraction) unitless	1
CF _{rec-fo} (fowl contaminated fraction) unitless	1
Q _{w-fowl} (fowl water intake rate) kg/day	.
Q _{w-game} (land game water intake rate) kg/day	32
Q _{p-fowl} (fowl fodder intake rate) kg/day	.
Q _{s-fowl} (fowl soil intake rate) kg/day	.
Q _{p-game} (land game fodder intake rate) kg/day	5.89
Q _{s-game} (land game soil intake rate) kg/day	0.2
f _{p-fowl} (fowl on-site fraction) unitless	1
f _{s-fowl} (fraction of year fowl is on site) unitless	1
f _{p-game} (land game on-site fraction) unitless	1
f _{s-game} (fraction of year land game is on site) unitless	1
MLF (game pasture plant mass loading factor) unitless	0.25
City (Climate Zone) PEF Selection	Albuquerque, NM
A _s / (acres) PEF Selection	5
Q/C _{wp} / inverse of the ratio of the geometric mean air concentration to the emission flux at center of a square source (g/m ² -s per kg/m ³) PEF Selection	55.22649302
V / fraction of vegetative cover (unitless)	0.5
U _m / mean annual wind speed (m/s)	4.02
U _t / equivalent threshold value (m/s)	11.32
F(x) / function dependant on U _m /U _t derived using Cowherd et al. (1985) (unitless)	0.0553
PEF (particulate emission factor) m ³ /kg	4459780162
A (Dispersion Constant)	14.9421
B (Dispersion Constant)	17.9869
C (Dispersion Constant)	205.1782

Output generated 05MAY2015:10:44:08

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Recreator Scenario - Sheep Camp (Continued)

Site-Specific
Recreator RISK for Contaminated Fowl and Game

Isotope	ICRP Lung Absorption Type	Food Ingestion Slope Factor (risk/pCi)	Game Concentration (pCi/g)	Fowl Concentration (pCi/g)	Plant to Beef Transfer Factor (pCi/kg per pCi/d)	Plant to Poultry Transfer Factor (pCi/kg per pCi/d)	Game Risk	Fowl Risk	Game Soil Risk	Fowl Soil Risk	Game Water Risk	Fowl Water Risk
Bi-210	M	1.30E-11	1	0	2.00E-03	-	2.07E-05	-	5.3E-11	-	1.33E-09	-
Pb-210	M	1.18E-09	1	0	7.00E-04	-	0.00188	-	6.24E-07	-	4.21E-08	-
Po-210	M	2.25E-09	1	0	5.00E-03	2.40E+00	0.00359	-	0.00000023	-	0.000000574	-
Ra-226+D	M	5.14E-10	1	0	1.70E-03	-	0.000819	-	0.00000103	-	4.46E-08	-
Th-230	S	1.19E-10	1	0	2.30E-04	-	0.00019	-	3.09E-08	-	1.4E-09	-
U-234	M	9.55E-11	1	0	3.90E-04	7.50E-01	0.000152	-	4.26E-08	-	1.9E-09	-
U-238+D	M	1.21E-10	1	0	3.90E-04	7.50E-01	0.000193	-	5.4E-08	-	2.41E-09	-
<i>*Total Risk</i>		-	-	-	-	-	<i>0.00684</i>	-	<i>0.00000201</i>	-	<i>0.000000668</i>	-

Output generated 14MAY2015:11:19:20

Total Risk from Soil (Ingestion, Inhalation, External Exposure): 0.000101
Total risk from ingestion of sheep for 5 months during sheep camp = 0.00000201

PRG = 2.9 pCi/g

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Recreator Scenario - Contaminated Game and Fowl

Site-Specific
Recreator Equation Inputs for Contaminated Fowl and Game

Variable	Value
TR (target cancer risk) unitless	3E-04
ED _{rec} (exposure duration - recreator) yr	30
EF _{rec} (exposure frequency - recreator) day/yr	350
IRGF _{rec} (land game consumption rate) g/day	151.8
IRGL _{rec} (fowl consumption rate) g/day	
CF _{rec-ga} (game contaminated fraction) unitless	1
CF _{rec-fo} (fowl contaminated fraction) unitless	1
Q _{w-fowl} (fowl water intake rate) kg/day	
Q _{w-game} (land game water intake rate) kg/day	64
Q _{p-fowl} (fowl fodder intake rate) kg/day	
Q _{s-fowl} (fowl soil intake rate) kg/day	
Q _{p-game} (land game fodder intake rate) kg/day	11.77
Q _{s-game} (land game soil intake rate) kg/day	0.39
f _{p-fowl} (fowl on-site fraction) unitless	1
f _{s-fowl} (fraction of year fowl is on site) unitless	1
f _{p-game} (land game on-site fraction) unitless	1
f _{s-game} (fraction of year land game is on site) unitless	1
MLF (game pasture plant mass loading factor) unitless	0.25

Output generated 16APR2015:13:33:14

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Recreator Scenario - Contaminated Game and Fowl (Continued)

Site-Specific
Recreator RISK for Contaminated Fowl and Game

Isotope	ICRP Lung Absorption Type	Food Ingestion Slope Factor (risk/pCi)	Game Concentration (pCi/g)	Fowl Concentration (pCi/g)	Plant to Beef Transfer Factor (pCi/kg per pCi/d)	Plant to Poultry Transfer Factor (pCi/kg per pCi/d)	Game Risk	Fowl Risk	Game Soil Risk	Fowl Soil Risk	Game Water Risk	Fowl Water Risk
Bi-210	M	1.30E-11	1	0	2.00E-03	-	0.0000207	-	2.52E-10	-	2.65E-09	-
Pb-210	M	1.18E-09	1	0	7.00E-04	-	0.00188	-	0.00000296	-	8.43E-08	-
Po-210	M	2.25E-09	1	0	5.00E-03	2.40E+00	0.00359	-	0.00000109	-	0.00000115	-
Ra-226+D	M	5.14E-10	1	0	1.70E-03	-	0.000819	-	0.00000489	-	8.91E-08	-
Th-230	S	1.19E-10	1	0	2.30E-04	-	0.00019	-	0.000000146	-	2.79E-09	-
U-234	M	9.55E-11	1	0	3.90E-04	7.50E-01	0.000152	-	0.000000202	-	3.8E-09	-
U-238+D	M	1.21E-10	1	0	3.90E-04	7.50E-01	0.000193	-	0.000000256	-	4.81E-09	-
<i>*Total Risk</i>		-	-	-	-	-	<i>0.00684</i>	-	<i>0.00000954</i>	-	<i>0.00000134</i>	-

Output generated 16APR2015:13:33:14

Total Risk from Ingestion of Game: 0.00000954
Total Risk from Ingestion of Fowl: 0.000000717
Total Risk from Soil (Ingestion, Inhalation, External Exposure): 0.00000923

Total Risk: 0.000019487

PRG = 15.4 pCi/g

Contribution of Ra-226+D Ext Exp to total risk =	46	% of total risk
Contribution of Fowl Ingestion to total risk =	4	% of total risk
Contribution of Game Ingestion to total risk =	49	% of total risk

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Industrial Scenario - Indoor Worker

Site-Specific
Indoor Worker Equation Inputs for Soil

Variable	Value
TR (target cancer risk) unitless	0.0003
t_{iw} (time - indoor worker) yr	25
EF_{iw} (exposure frequency - indoor worker) day/yr	250
ED_{iw} (exposure duration - indoor worker) yr	25
ET_{iw} (exposure time - indoor worker) hr/day	8
IRA_{iw} (inhalation rate - indoor worker) m^3/day	60
IRS_{iw} (soil intake rate - indoor worker) mg/day	50
GSF_i (gamma shielding factor - indoor) unitless	0.4
City (Climate Zone) PEF Selection	Albuquerque, NM
A_s / (acres) PEF Selection	5
Q/C_{wp} / inverse of the ratio of the geometric mean air concentration to the emission flux at center of a square source (g/m^2 -s per kg/m^3) PEF Selection	55.22649302
V / fraction of vegetative cover (unitless)	0.5
U_m / mean annual wind speed (m/s)	4.02
U_t / equivalent threshold value (m/s)	11.32
F(x) / function dependant on U_m/U_t derived using Cowherd et al. (1985) (unitless)	0.0553
PEF (particulate emission factor) m^3/kg	4459780162
A (Dispersion Constant)	14.9421
B (Dispersion Constant)	17.9869
C (Dispersion Constant)	205.1782

Output generated 20MAR2015:09:50:50

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Industrial Scenario - Indoor Worker (Continued)

Site-Specific
Indoor Worker RISK for Soil

Isotope	ICRP Lung Absorption Type	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Adult Soil Ingestion Slope Factor (risk/pCi)	Concentration (pCi/g)	Particulate Emission or Volatilization factor (m ³ /kg)	Lambda	Half-life (years)	20001 m ² Soil Volume Area Correction Factor	Ingestion Risk	Inhalation Risk	External Exposure Risk	Total Risk
Bi-210	M	M	4.55E-10	2.77E-09	3.74E-12	1	4.46E+09	5.05E+01	1.37E-02	8.67E-01	9.26E-13	1.01E-14	4.34E-12	5.28E-12
Pb-210	M	M	1.59E-08	1.48E-09	5.99E-10	1	4.46E+09	3.12E-02	2.22E+01	9.46E-01	0.00000013	3.09E-10	2.22E-09	1.33E-07
Po-210	M	M	1.45E-08	4.51E-11	1.44E-09	1	4.46E+09	1.83E+00	3.79E-01	9.36E-01	9.84E-09	8.88E-12	2.11E-12	9.85E-09
Ra-226+D	M	M	2.82E-08	8.37E-06	2.95E-10	1	4.46E+09	4.33E-04	1.60E+03	9.38E-01	9.17E-08	7.86E-10	0.0000178	1.79E-05
Th-230	S	S	3.41E-08	8.45E-10	7.73E-11	1	4.46E+09	9.19E-06	7.54E+04	1.00E+00	2.42E-08	9.56E-10	1.93E-09	2.7E-08
U-234	M	M	2.78E-08	2.53E-10	5.11E-11	1	4.46E+09	2.82E-06	2.46E+05	1.00E+00	1.6E-08	7.79E-10	5.78E-10	1.73E-08
U-238+D	M	M	2.37E-08	1.19E-07	5.62E-11	1	4.46E+09	1.55E-10	4.47E+09	9.70E-01	1.76E-08	6.64E-10	2.63E-07	2.82E-07
<i>*Total Risk</i>			-	-	-	-	-	-	-	-	<i>2.89E-07</i>	<i>3.5E-09</i>	<i>0.0000181</i>	<i>1.84E-05</i>

Output generated 20MAR2015:09:50:50

PRG = **16.3 pCi/g**

Ra-226+D, external exposure, represents **97** % of total risk

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Industrial Scenario - Outdoor Worker

Site-Specific
Outdoor Worker Equation Inputs for Soil

Variable	Value
TR (target cancer risk) unitless	0.0003
t_{ow} (time - outdoor worker) yr	25
EF_{ow} (exposure frequency - outdoor worker) day/yr	225
ED_{ow} (exposure duration - outdoor worker) yr	25
IR_{ow} (soil intake rate - outdoor worker) mg/day	100
IRA_{ow} (inhalation rate - outdoor worker) m ³ /day	60
ET_{ow} (exposure time - outdoor worker) hr/day	8
City (Climate Zone) PEF Selection	Albuquerque, NM
A_s / (acres) PEF Selection	5
Q/C_{wp} / inverse of the ratio of the geometric mean air concentration to the emission flux at center of a square source (g/m ² -s per kg/m ³) PEF Selection	55.22649302
V / fraction of vegetative cover (unitless)	0.5
U_m / mean annual wind speed (m/s)	4.02
U_t / equivalent threshold value (m/s)	11.32
$F(x)$ / function dependant on U_m/U_t derived using Cowherd et al. (1985) (unitless)	0.0553
PEF (particulate emission factor) m ³ /kg	4459780162
A (Dispersion Constant)	14.9421
B (Dispersion Constant)	17.9869
C (Dispersion Constant)	205.1782

Output generated 20MAR2015:09:39:31

Appendix 1
Preliminary Remediation Goal (PRG) Calculator Risk-Modeling Output
Industrial Scenario - Outdoor Worker (Continued)

Site-Specific
Outdoor Worker RISK for Soil

Isotope	ICRP Lung Absorption Type	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Adult Soil Ingestion Slope Factor (risk/pCi)	Concentration (pCi/g)	Particulate Emission or Volatilization factor (m ³ /kg)	Lambda	Half-life (years)	20001 m ² Soil Volume Area Correction Factor	Ingestion Risk	Inhalation Risk	External Exposure Risk	Total Risk
Bi-210	M	M	4.55E-10	2.77E-09	3.74E-12	1	4.46E+09	5.05E+01	1.37E-02	8.67E-01	1.67E-12	9.09E-15	9.77E-12	1.14E-11
Pb-210	M	M	1.59E-08	1.48E-09	5.99E-10	1	4.46E+09	3.12E-02	2.22E+01	9.46E-01	2.34E-07	2.78E-10	5E-09	2.39E-07
Po-210	M	M	1.45E-08	4.51E-11	1.44E-09	1	4.46E+09	1.83E+00	3.79E-01	9.36E-01	1.77E-08	7.99E-12	4.74E-12	1.77E-08
Ra-226+D	M	M	2.82E-08	8.37E-06	2.95E-10	1	4.46E+09	4.33E-04	1.60E+03	9.38E-01	1.65E-07	7.08E-10	0.0000401	0.0000403
Th-230	S	S	3.41E-08	8.45E-10	7.73E-11	1	4.46E+09	9.19E-06	7.54E+04	1.00E+00	4.35E-08	8.6E-10	4.34E-09	4.87E-08
U-234	M	M	2.78E-08	2.53E-10	5.11E-11	1	4.46E+09	2.82E-06	2.46E+05	1.00E+00	2.87E-08	7.01E-10	1.3E-09	3.07E-08
U-238+D	M	M	2.37E-08	1.19E-07	5.62E-11	1	4.46E+09	1.55E-10	4.47E+09	9.70E-01	3.16E-08	5.98E-10	5.93E-07	6.25E-07
<i>*Total Risk</i>			-	-	-	-	-	-	-	-	<i>5.21E-07</i>	<i>3.15E-09</i>	<i>0.0000407</i>	<i>4.12E-05</i>

Output generated 20MAR2015:09:39:31

PRG = **7.3** pCi/g

Ra-226+D, external exposure, represer **97** % of total risk

APPENDIX 2
RESidual RADioactivity (ResRad) Dose-Modeling Output

RESidual RADioactivity (ResRad) Dose-Modeling Output
Residential (with Radon Inhalation back-calculated to soil)

Summary : RESRAD Residential (Radon Only)

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Summary : RESRAD Residential (Radon Only)

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1 (1)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1 (2)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1 (3)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1 (4)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1 (5)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1 (6)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1 (7)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1 (8)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1 (9)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1 (10)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1 (11)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1 (12)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1 (13)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1 (14)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1 (15)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1 (16)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1 (17)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1 (18)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1 (19)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1 (20)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.129E-02	2.077E-02	DCF2 (1)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2 (2)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2 (3)
B-1	Po-210	1.580E-02	1.582E-02	DCF2 (4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2 (5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2 (8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2 (11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2 (14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2 (17)
B-1	Th-230	3.760E-01	3.759E-01	DCF2 (20)
B-1	U-234	3.480E-02	3.479E-02	DCF2 (35)
B-1	U-238	2.970E-02	2.973E-02	DCF2 (50)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2 (51)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2 (66)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	2.585E-03	2.575E-03	DCF3 (1)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3 (2)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3 (3)
D-1	Po-210	4.480E-03	4.477E-03	DCF3 (4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3 (8)
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3 (11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3 (14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3 (17)
D-1	Th-230	7.920E-04	7.918E-04	DCF3 (20)
D-1	U-234	1.830E-04	1.831E-04	DCF3 (35)

Summary : RESRAD Residential (Radon Only)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	U-238	1.650E-04	1.650E-04	DCF3(50)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(51)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(66)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(35,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(35,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(35,3)
D-34				

Summary : RESRAD Residential (Radon Only)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(50,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(50,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(50,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(66,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(66,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(66,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(35,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(35,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(50,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(50,2)
D-5				

Summary : RESRAD Residential (Radon Only)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5				
D-5	U-238+D1 , fish	1.000E+01	1.000E+01	BIOFAC(66,1)
D-5	U-238+D1 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(66,2)
D-5				

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Residential (Radon Only)

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.200E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(35)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(50)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(35)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(50)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ

Summary : RESRAD Residential (Radon Only)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsat. zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.632E-02	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC (5)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC (20)
R016	Unsat. zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)

Summary : RESRAD Residential (Radon Only)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (35)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (35,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (35)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (35)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (35)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (50)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (50,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (50)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (50)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (50)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	2.600E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.560E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)

Summary : RESRAD Residential (Radon Only)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	not used	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	1.000E+00	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	not used	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	1.000E+00	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Summary : RESRAD Residential (Radon Only)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	1.500E-01	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	2.400E+00	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	1.000E-01	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	3.000E-02	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	3.000E-07	3.000E-07	---	DIFFL
R021	in contaminated zone soil	2.000E-06	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	2.000E+00	2.000E+00	---	HMX
R021	Average building air exchange rate (1/hr)	5.000E-01	5.000E-01	---	REXG
R021	Height of the building (room) (m)	2.500E+00	2.500E+00	---	HRM
R021	Building interior area factor	0.000E+00	0.000E+00	code computed (time dependent)	FAI
R021	Building depth below ground surface (m)	-1.000E+00	-1.000E+00	code computed (time dependent)	DMFL
R021	Emanating power of Rn-222 gas	2.500E-01	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary : RESRAD Residential (Radon Only)

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Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	suppressed
2 -- inhalation (w/o radon)	suppressed
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	suppressed
9 -- radon	active
Find peak pathway doses	suppressed

Summary : RESRAD Residential (Radon Only)

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Pb-210	1.000E+00
Thickness:	2.00 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	1.000E+00
		Th-230	1.000E+00
		U-234	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.763E+01	3.754E+01	3.737E+01	3.675E+01	3.505E+01	2.977E+01	1.938E+01	7.504E+00
M(t):	3.136E+00	3.129E+00	3.114E+00	3.062E+00	2.921E+00	2.481E+00	1.615E+00	6.253E-01

Maximum TDOSE(t): 3.763E+01 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Residential (Radon Only)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	3.763E+01	0.9998	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	8.154E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	2.498E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	1.762E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	3.763E+01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.763E+01	0.9998
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.154E-03	0.0002
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.498E-08	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.762E-14	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.763E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Residential (Radon Only)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	3.752E+01	0.9993	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	2.443E-02	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	1.745E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	2.638E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	3.754E+01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.752E+01	0.9993
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.443E-02	0.0007
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.745E-07	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.638E-13	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.754E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Residential (Radon Only)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	3.731E+01	0.9985	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	5.684E-02	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	9.189E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	3.064E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	3.737E+01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.731E+01	0.9985
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.684E-02	0.0015
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.189E-07	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.064E-12	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.737E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Residential (Radon Only)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	3.658E+01	0.9954	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	1.689E-01	0.0046	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	8.103E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	7.992E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	3.675E+01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.658E+01	0.9954
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.689E-01	0.0046
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.103E-06	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.992E-11	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.675E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Residential (Radon Only)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	3.457E+01	0.9864	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	4.768E-01	0.0136	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	6.558E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	1.864E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	3.505E+01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.457E+01	0.9864
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.768E-01	0.0136
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.558E-05	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.864E-09	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.505E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Residential (Radon Only)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	2.834E+01	0.9521	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	1.425E+00	0.0479	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	6.171E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	5.649E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	2.977E+01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.834E+01	0.9521
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.425E+00	0.0479
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.171E-04	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.649E-08	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.977E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Residential (Radon Only)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	1.609E+01	0.8304	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	3.283E+00	0.1694	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	3.728E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	9.517E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	1.938E+01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.609E+01	0.8304
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.283E+00	0.1694
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.728E-03	0.0002
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.517E-07	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.938E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Residential (Radon Only)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	2.147E+00	0.2861	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	5.119E+00	0.6822	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	1.220E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	7.803E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	7.278E+00	0.9699	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	2.008E-01	0.0268	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.347E+00	0.3128
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	2.467E-02	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.144E+00	0.6855
U-234	0.000E+00	0.0000	0.000E+00	0.0000	3.521E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.255E-02	0.0017
U-238	0.000E+00	0.0000	0.000E+00	0.0000	4.595E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.262E-06	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	2.258E-01	0.0301	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.504E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Residential (Radon Only)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210+D	Pb-210+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210+D	Po-210	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210+D1	Pb-210+D1	1.320E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210+D2	Pb-210+D2	1.900E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-210	Po-210	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	9.996E-01	3.761E+01	3.750E+01	3.729E+01	3.656E+01	3.456E+01	2.833E+01	1.609E+01	2.346E+00
Ra-226+D	Pb-210+D	9.996E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Po-210	9.996E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	ΣDSR(j)		3.761E+01	3.750E+01	3.729E+01	3.656E+01	3.456E+01	2.833E+01	1.609E+01	2.346E+00
Ra-226+D	Ra-226+D	1.319E-06	4.965E-05	4.951E-05	4.923E-05	4.826E-05	4.561E-05	3.740E-05	2.123E-05	3.097E-06
Ra-226+D	Pb-210+D1	1.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	ΣDSR(j)		4.965E-05	4.951E-05	4.923E-05	4.826E-05	4.561E-05	3.740E-05	2.123E-05	3.097E-06
Ra-226+D	Ra-226+D	1.899E-08	7.146E-07	7.126E-07	7.086E-07	6.947E-07	6.566E-07	5.383E-07	3.056E-07	4.458E-08
Ra-226+D	Pb-210+D2	1.899E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	ΣDSR(j)		7.146E-07	7.126E-07	7.086E-07	6.947E-07	6.566E-07	5.383E-07	3.056E-07	4.458E-08
Ra-226+D1	Ra-226+D1	2.100E-04	7.900E-03	7.878E-03	7.833E-03	7.680E-03	7.258E-03	5.951E-03	3.379E-03	4.929E-04
Ra-226+D1	Pb-210+D	2.100E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D1	Po-210	2.100E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D1	ΣDSR(j)		7.900E-03	7.878E-03	7.833E-03	7.680E-03	7.258E-03	5.951E-03	3.379E-03	4.929E-04
Ra-226+D1	Ra-226+D1	2.771E-10	1.043E-08	1.040E-08	1.034E-08	1.014E-08	9.581E-09	7.855E-09	4.460E-09	6.506E-10
Ra-226+D1	Pb-210+D1	2.771E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D1	ΣDSR(j)		1.043E-08	1.040E-08	1.034E-08	1.014E-08	9.581E-09	7.855E-09	4.460E-09	6.506E-10
Ra-226+D1	Ra-226+D1	3.989E-12	1.501E-10	1.497E-10	1.488E-10	1.459E-10	1.379E-10	1.131E-10	6.419E-11	9.364E-12
Ra-226+D1	Pb-210+D2	3.989E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D1	ΣDSR(j)		1.501E-10	1.497E-10	1.488E-10	1.459E-10	1.379E-10	1.131E-10	6.419E-11	9.364E-12
Ra-226+D2	Ra-226+D2	1.998E-04	7.516E-03	7.495E-03	7.453E-03	7.307E-03	6.906E-03	5.662E-03	3.214E-03	4.689E-04
Ra-226+D2	Pb-210+D	1.998E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D2	Po-210	1.998E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D2	ΣDSR(j)		7.516E-03	7.495E-03	7.453E-03	7.307E-03	6.906E-03	5.662E-03	3.214E-03	4.689E-04
Ra-226+D2	Ra-226+D2	2.637E-10	9.921E-09	9.893E-09	9.838E-09	9.645E-09	9.116E-09	7.474E-09	4.243E-09	6.190E-10
Ra-226+D2	Pb-210+D1	2.637E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D2	ΣDSR(j)		9.921E-09	9.893E-09	9.838E-09	9.645E-09	9.116E-09	7.474E-09	4.243E-09	6.190E-10

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D2	Ra-226+D2	3.795E-12	1.428E-10	1.424E-10	1.416E-10	1.388E-10	1.312E-10	1.076E-10	6.108E-11	8.910E-12
Ra-226+D2	Pb-210+D2	3.795E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D2	ΣDSR(j)		1.428E-10	1.424E-10	1.416E-10	1.388E-10	1.312E-10	1.076E-10	6.108E-11	8.910E-12
Ra-226+D3	Ra-226+D3	4.196E-08	1.579E-06	1.574E-06	1.565E-06	1.535E-06	1.450E-06	1.189E-06	6.752E-07	9.849E-08
Ra-226+D3	Pb-210+D	4.196E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D3	Po-210	4.196E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D3	ΣDSR(j)		1.579E-06	1.574E-06	1.565E-06	1.535E-06	1.450E-06	1.189E-06	6.752E-07	9.849E-08
Ra-226+D3	Ra-226+D3	5.538E-14	2.084E-12	2.078E-12	2.066E-12	2.026E-12	1.915E-12	1.570E-12	8.912E-13	1.300E-13
Ra-226+D3	Pb-210+D1	5.538E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D3	ΣDSR(j)		2.084E-12	2.078E-12	2.066E-12	2.026E-12	1.915E-12	1.570E-12	8.912E-13	1.300E-13
Ra-226+D3	Ra-226+D3	7.972E-16	3.000E-14	2.991E-14	2.974E-14	2.916E-14	2.756E-14	2.260E-14	1.283E-14	1.871E-15
Ra-226+D3	Pb-210+D2	7.972E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D3	ΣDSR(j)		3.000E-14	2.991E-14	2.974E-14	2.916E-14	2.756E-14	2.260E-14	1.283E-14	1.871E-15
Ra-226+D4	Ra-226+D4	2.000E-07	7.525E-06	7.504E-06	7.462E-06	7.316E-06	6.914E-06	5.669E-06	3.218E-06	4.695E-07
Ra-226+D4	Pb-210+D	2.000E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D4	Po-210	2.000E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D4	ΣDSR(j)		7.525E-06	7.504E-06	7.462E-06	7.316E-06	6.914E-06	5.669E-06	3.218E-06	4.695E-07
Ra-226+D4	Ra-226+D4	2.640E-13	9.933E-12	9.905E-12	9.849E-12	9.657E-12	9.127E-12	7.483E-12	4.248E-12	6.197E-13
Ra-226+D4	Pb-210+D1	2.640E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D4	ΣDSR(j)		9.933E-12	9.905E-12	9.849E-12	9.657E-12	9.127E-12	7.483E-12	4.248E-12	6.197E-13
Ra-226+D4	Ra-226+D4	3.800E-15	1.430E-13	1.426E-13	1.418E-13	1.390E-13	1.314E-13	1.077E-13	6.115E-14	8.920E-15
Ra-226+D4	Pb-210+D2	3.800E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D4	ΣDSR(j)		1.430E-13	1.426E-13	1.418E-13	1.390E-13	1.314E-13	1.077E-13	6.115E-14	8.920E-15
Th-230	Th-230	9.996E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D	9.996E-01	8.150E-03	2.442E-02	5.682E-02	1.688E-01	4.766E-01	1.424E+00	3.281E+00	5.141E+00
Th-230	Pb-210+D	9.996E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Po-210	9.996E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		8.150E-03	2.442E-02	5.682E-02	1.688E-01	4.766E-01	1.424E+00	3.281E+00	5.141E+00
Th-230	Th-230	1.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D	1.319E-06	1.076E-08	3.224E-08	7.500E-08	2.228E-07	6.291E-07	1.880E-06	4.331E-06	6.787E-06
Th-230	Pb-210+D1	1.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		1.076E-08	3.224E-08	7.500E-08	2.228E-07	6.291E-07	1.880E-06	4.331E-06	6.787E-06
Th-230	Th-230	1.899E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D	1.899E-08	1.549E-10	4.640E-10	1.080E-09	3.207E-09	9.056E-09	2.706E-08	6.234E-08	9.769E-08
Th-230	Pb-210+D2	1.899E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		1.549E-10	4.640E-10	1.080E-09	3.207E-09	9.056E-09	2.706E-08	6.234E-08	9.769E-08

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.100E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D1	2.100E-04	1.712E-06	5.129E-06	1.194E-05	3.545E-05	1.001E-04	2.991E-04	6.892E-04	1.080E-03
Th-230	Pb-210+D	2.100E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Po-210	2.100E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		1.712E-06	5.129E-06	1.194E-05	3.545E-05	1.001E-04	2.991E-04	6.892E-04	1.080E-03
Th-230	Th-230	2.771E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D1	2.771E-10	2.260E-12	6.771E-12	1.575E-11	4.680E-11	1.321E-10	3.949E-10	9.098E-10	1.426E-09
Th-230	Pb-210+D1	2.771E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		2.260E-12	6.771E-12	1.575E-11	4.680E-11	1.321E-10	3.949E-10	9.098E-10	1.426E-09
Th-230	Th-230	3.989E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D1	3.989E-12	3.253E-14	9.746E-14	2.268E-13	6.736E-13	1.902E-12	5.684E-12	1.310E-11	2.052E-11
Th-230	Pb-210+D2	3.989E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		3.253E-14	9.746E-14	2.268E-13	6.736E-13	1.902E-12	5.684E-12	1.310E-11	2.052E-11
Th-230	Th-230	1.998E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D2	1.998E-04	1.629E-06	4.880E-06	1.136E-05	3.373E-05	9.525E-05	2.846E-04	6.557E-04	1.027E-03
Th-230	Pb-210+D	1.998E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Po-210	1.998E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		1.629E-06	4.880E-06	1.136E-05	3.373E-05	9.525E-05	2.846E-04	6.557E-04	1.027E-03
Th-230	Th-230	2.637E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D2	2.637E-10	2.150E-12	6.442E-12	1.499E-11	4.452E-11	1.257E-10	3.757E-10	8.656E-10	1.356E-09
Th-230	Pb-210+D1	2.637E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		2.150E-12	6.442E-12	1.499E-11	4.452E-11	1.257E-10	3.757E-10	8.656E-10	1.356E-09
Th-230	Th-230	3.795E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D2	3.795E-12	3.095E-14	9.272E-14	2.157E-13	6.409E-13	1.810E-12	5.408E-12	1.246E-11	1.952E-11
Th-230	Pb-210+D2	3.795E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		3.095E-14	9.272E-14	2.157E-13	6.409E-13	1.810E-12	5.408E-12	1.246E-11	1.952E-11
Th-230	Th-230	4.196E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D3	4.196E-08	3.421E-10	1.025E-09	2.385E-09	7.085E-09	2.001E-08	5.978E-08	1.377E-07	2.158E-07
Th-230	Pb-210+D	4.196E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Po-210	4.196E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		3.421E-10	1.025E-09	2.385E-09	7.085E-09	2.001E-08	5.978E-08	1.377E-07	2.158E-07
Th-230	Th-230	5.538E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D3	5.538E-14	4.516E-16	1.353E-15	3.148E-15	9.352E-15	2.641E-14	7.891E-14	1.818E-13	2.849E-13
Th-230	Pb-210+D1	5.538E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		4.516E-16	1.353E-15	3.148E-15	9.352E-15	2.641E-14	7.891E-14	1.818E-13	2.849E-13
Th-230	Th-230	7.972E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D3	7.972E-16	6.500E-18	1.948E-17	4.532E-17	1.346E-16	3.801E-16	1.136E-15	2.617E-15	4.100E-15
Th-230	Pb-210+D2	7.972E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		6.500E-18	1.948E-17	4.532E-17	1.346E-16	3.801E-16	1.136E-15	2.617E-15	4.100E-15

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.000E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D4	2.000E-07	1.631E-09	4.886E-09	1.137E-08	3.377E-08	9.536E-08	2.850E-07	6.565E-07	1.029E-06
Th-230	Pb-210+D	2.000E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Po-210	2.000E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		1.631E-09	4.886E-09	1.137E-08	3.377E-08	9.536E-08	2.850E-07	6.565E-07	1.029E-06
Th-230	Th-230	2.640E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D4	2.640E-13	2.153E-15	6.450E-15	1.501E-14	4.458E-14	1.259E-13	3.761E-13	8.666E-13	1.358E-12
Th-230	Pb-210+D1	2.640E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		2.153E-15	6.450E-15	1.501E-14	4.458E-14	1.259E-13	3.761E-13	8.666E-13	1.358E-12
Th-230	Th-230	3.800E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D4	3.800E-15	3.098E-17	9.284E-17	2.160E-16	6.416E-16	1.812E-15	5.414E-15	1.247E-14	1.955E-14
Th-230	Pb-210+D2	3.800E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDSR(j)		3.098E-17	9.284E-17	2.160E-16	6.416E-16	1.812E-15	5.414E-15	1.247E-14	1.955E-14
U-234	U-234	9.996E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	9.996E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D	9.996E-01	2.497E-08	1.745E-07	9.185E-07	8.100E-06	6.555E-05	6.169E-04	3.726E-03	1.255E-02
U-234	Pb-210+D	9.996E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Po-210	9.996E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		2.497E-08	1.745E-07	9.185E-07	8.100E-06	6.555E-05	6.169E-04	3.726E-03	1.255E-02
U-234	U-234	1.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	1.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D	1.319E-06	3.296E-14	2.303E-13	1.212E-12	1.069E-11	8.653E-11	8.143E-10	4.919E-09	1.656E-08
U-234	Pb-210+D1	1.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		3.296E-14	2.303E-13	1.212E-12	1.069E-11	8.653E-11	8.143E-10	4.919E-09	1.656E-08
U-234	U-234	1.899E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	1.899E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D	1.899E-08	4.744E-16	3.315E-15	1.745E-14	1.539E-13	1.245E-12	1.172E-11	7.080E-11	2.384E-10
U-234	Pb-210+D2	1.899E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		4.744E-16	3.315E-15	1.745E-14	1.539E-13	1.245E-12	1.172E-11	7.080E-11	2.384E-10
U-234	U-234	2.100E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	2.100E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D1	2.100E-04	5.244E-12	3.664E-11	1.929E-10	1.701E-09	1.377E-08	1.296E-07	7.827E-07	2.636E-06
U-234	Pb-210+D	2.100E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Po-210	2.100E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		5.244E-12	3.664E-11	1.929E-10	1.701E-09	1.377E-08	1.296E-07	7.827E-07	2.636E-06
U-234	U-234	2.771E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	2.771E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D1	2.771E-10	6.922E-18	4.837E-17	2.547E-16	2.246E-15	1.817E-14	1.710E-13	1.033E-12	3.479E-12
U-234	Pb-210+D1	2.771E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		6.922E-18	4.837E-17	2.547E-16	2.246E-15	1.817E-14	1.710E-13	1.033E-12	3.479E-12

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	3.989E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	3.989E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D1	3.989E-12	9.964E-20	6.963E-19	3.665E-18	3.232E-17	2.616E-16	2.462E-15	1.487E-14	5.008E-14
U-234	Pb-210+D2	3.989E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		9.964E-20	6.963E-19	3.665E-18	3.232E-17	2.616E-16	2.462E-15	1.487E-14	5.008E-14
U-234	U-234	1.998E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	1.998E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D2	1.998E-04	4.989E-12	3.486E-11	1.835E-10	1.619E-09	1.310E-08	1.233E-07	7.446E-07	2.508E-06
U-234	Pb-210+D	1.998E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Po-210	1.998E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		4.989E-12	3.486E-11	1.835E-10	1.619E-09	1.310E-08	1.233E-07	7.446E-07	2.508E-06
U-234	U-234	2.637E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	2.637E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D2	2.637E-10	6.586E-18	4.602E-17	2.423E-16	2.137E-15	1.729E-14	1.627E-13	9.829E-13	3.310E-12
U-234	Pb-210+D1	2.637E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		6.586E-18	4.602E-17	2.423E-16	2.137E-15	1.729E-14	1.627E-13	9.829E-13	3.310E-12
U-234	U-234	3.795E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	3.795E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D2	3.795E-12	9.480E-20	6.624E-19	3.487E-18	3.075E-17	2.489E-16	2.342E-15	1.415E-14	4.764E-14
U-234	Pb-210+D2	3.795E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		9.480E-20	6.624E-19	3.487E-18	3.075E-17	2.489E-16	2.342E-15	1.415E-14	4.764E-14
U-234	U-234	4.196E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	4.196E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D3	4.196E-08	1.048E-15	7.323E-15	3.855E-14	3.400E-13	2.751E-12	2.589E-11	1.564E-10	5.267E-10
U-234	Pb-210+D	4.196E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Po-210	4.196E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		1.048E-15	7.323E-15	3.855E-14	3.400E-13	2.751E-12	2.589E-11	1.564E-10	5.267E-10
U-234	U-234	5.538E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	5.538E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D3	5.538E-14	1.383E-21	9.666E-21	5.089E-20	4.488E-19	3.632E-18	3.418E-17	2.065E-16	6.952E-16
U-234	Pb-210+D1	5.538E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		1.383E-21	9.666E-21	5.089E-20	4.488E-19	3.632E-18	3.418E-17	2.065E-16	6.952E-16
U-234	U-234	7.972E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	7.972E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D3	7.972E-16	1.991E-23	1.391E-22	7.325E-22	6.460E-21	5.228E-20	4.920E-19	2.972E-18	1.001E-17
U-234	Pb-210+D2	7.972E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		1.991E-23	1.391E-22	7.325E-22	6.460E-21	5.228E-20	4.920E-19	2.972E-18	1.001E-17

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.000E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	2.000E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D4	2.000E-07	4.996E-15	3.491E-14	1.838E-13	1.621E-12	1.312E-11	1.234E-10	7.455E-10	2.511E-09
U-234	Pb-210+D	2.000E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Po-210	2.000E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		4.996E-15	3.491E-14	1.838E-13	1.621E-12	1.312E-11	1.234E-10	7.455E-10	2.511E-09
U-234	U-234	2.640E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	2.640E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D4	2.640E-13	6.594E-21	4.608E-20	2.426E-19	2.139E-18	1.731E-17	1.629E-16	9.841E-16	3.314E-15
U-234	Pb-210+D1	2.640E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		6.594E-21	4.608E-20	2.426E-19	2.139E-18	1.731E-17	1.629E-16	9.841E-16	3.314E-15
U-234	U-234	3.800E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	3.800E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D4	3.800E-15	9.491E-23	6.632E-22	3.492E-21	3.079E-20	2.492E-19	2.345E-18	1.417E-17	4.770E-17
U-234	Pb-210+D2	3.800E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDSR(j)		9.491E-23	6.632E-22	3.492E-21	3.079E-20	2.492E-19	2.345E-18	1.417E-17	4.770E-17
U-238	U-238	5.450E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-238+D	1.599E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	1.599E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	1.599E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D	1.599E-03	2.819E-17	4.219E-16	4.900E-15	1.278E-13	2.982E-12	9.035E-11	1.522E-09	1.321E-08
U-238+D	Pb-210+D	1.599E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Po-210	1.599E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		2.819E-17	4.219E-16	4.900E-15	1.278E-13	2.982E-12	9.035E-11	1.522E-09	1.321E-08
U-238+D	U-238+D	2.111E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	2.111E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	2.111E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D	2.111E-09	3.721E-23	5.570E-22	6.468E-21	1.687E-19	3.936E-18	1.193E-16	2.009E-15	1.744E-14
U-238+D	Pb-210+D1	2.111E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		3.721E-23	5.570E-22	6.468E-21	1.687E-19	3.936E-18	1.193E-16	2.009E-15	1.744E-14
U-238+D	U-238+D	3.039E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	3.039E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	3.039E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D	3.039E-11	5.356E-25	8.017E-24	9.311E-23	2.429E-21	5.665E-20	1.717E-18	2.892E-17	2.511E-16
U-238+D	Pb-210+D2	3.039E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		5.356E-25	8.017E-24	9.311E-23	2.429E-21	5.665E-20	1.717E-18	2.892E-17	2.511E-16

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	3.359E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	3.359E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	3.359E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D1	3.359E-07	5.920E-21	8.863E-20	1.029E-18	2.685E-17	6.263E-16	1.898E-14	3.197E-13	2.776E-12
U-238+D	Pb-210+D	3.359E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Po-210	3.359E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		5.920E-21	8.863E-20	1.029E-18	2.685E-17	6.263E-16	1.898E-14	3.197E-13	2.776E-12
U-238+D	U-238+D	4.434E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	4.434E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	4.434E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D1	4.434E-13	7.815E-27	1.170E-25	1.359E-24	3.544E-23	8.267E-22	2.505E-20	4.220E-19	3.664E-18
U-238+D	Pb-210+D1	4.434E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		7.815E-27	1.170E-25	1.359E-24	3.544E-23	8.267E-22	2.505E-20	4.220E-19	3.664E-18
U-238+D	U-238+D	6.383E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	6.383E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	6.383E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D1	6.383E-15	1.125E-28	1.684E-27	1.956E-26	5.101E-25	1.190E-23	3.606E-22	6.074E-21	5.274E-20
U-238+D	Pb-210+D2	6.383E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		1.125E-28	1.684E-27	1.956E-26	5.101E-25	1.190E-23	3.606E-22	6.074E-21	5.274E-20
U-238+D	U-238+D	3.196E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	3.196E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	3.196E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D2	3.196E-07	5.633E-21	8.432E-20	9.793E-19	2.554E-17	5.959E-16	1.806E-14	3.042E-13	2.641E-12
U-238+D	Pb-210+D	3.196E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Po-210	3.196E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		5.633E-21	8.432E-20	9.793E-19	2.554E-17	5.959E-16	1.806E-14	3.042E-13	2.641E-12
U-238+D	U-238+D	4.219E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	4.219E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	4.219E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D2	4.219E-13	7.435E-27	1.113E-25	1.293E-24	3.372E-23	7.866E-22	2.383E-20	4.015E-19	3.486E-18
U-238+D	Pb-210+D1	4.219E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		7.435E-27	1.113E-25	1.293E-24	3.372E-23	7.866E-22	2.383E-20	4.015E-19	3.486E-18
U-238+D	U-238+D	6.073E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	6.073E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	6.073E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D2	6.073E-15	1.070E-28	1.602E-27	1.861E-26	4.853E-25	1.132E-23	3.431E-22	5.779E-21	5.017E-20
U-238+D	Pb-210+D2	6.073E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		1.070E-28	1.602E-27	1.861E-26	4.853E-25	1.132E-23	3.431E-22	5.779E-21	5.017E-20

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	6.713E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	6.713E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	6.713E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D3	6.713E-11	1.183E-24	1.771E-23	2.057E-22	5.365E-21	1.252E-19	3.792E-18	6.389E-17	5.547E-16
U-238+D	Pb-210+D	6.713E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Po-210	6.713E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		1.183E-24	1.771E-23	2.057E-22	5.365E-21	1.252E-19	3.792E-18	6.389E-17	5.547E-16
U-238+D	U-238+D	8.862E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	8.862E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	8.862E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D3	8.862E-17	1.562E-30	2.338E-29	2.715E-28	7.082E-27	1.652E-25	5.006E-24	8.433E-23	7.322E-22
U-238+D	Pb-210+D1	8.862E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		1.562E-30	2.338E-29	2.715E-28	7.082E-27	1.652E-25	5.006E-24	8.433E-23	7.322E-22
U-238+D	U-238+D	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D3	1.276E-18	2.248E-32	3.365E-31	3.908E-30	1.019E-28	2.378E-27	7.206E-26	1.214E-24	1.054E-23
U-238+D	Pb-210+D2	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		2.248E-32	3.365E-31	3.908E-30	1.019E-28	2.378E-27	7.206E-26	1.214E-24	1.054E-23
U-238+D	U-238+D	3.200E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	3.200E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	3.200E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D4	3.200E-10	5.640E-24	8.442E-23	9.805E-22	2.558E-20	5.966E-19	1.808E-17	3.045E-16	2.644E-15
U-238+D	Pb-210+D	3.200E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Po-210	3.200E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		5.640E-24	8.442E-23	9.805E-22	2.558E-20	5.966E-19	1.808E-17	3.045E-16	2.644E-15
U-238+D	U-238+D	4.224E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	4.224E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	4.224E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D4	4.224E-16	7.444E-30	1.114E-28	1.294E-27	3.376E-26	7.875E-25	2.386E-23	4.020E-22	3.490E-21
U-238+D	Pb-210+D1	4.224E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		7.444E-30	1.114E-28	1.294E-27	3.376E-26	7.875E-25	2.386E-23	4.020E-22	3.490E-21
U-238+D	U-238+D	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D4	6.080E-18	1.072E-31	1.604E-30	1.863E-29	4.859E-28	1.134E-26	3.435E-25	5.786E-24	5.023E-23
U-238+D	Pb-210+D2	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	ΣDSR(j)		1.072E-31	1.604E-30	1.863E-29	4.859E-28	1.134E-26	3.435E-25	5.786E-24	5.023E-23

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	9.980E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	9.980E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	9.980E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D	9.980E-01	1.759E-14	2.633E-13	3.058E-12	7.976E-11	1.861E-09	5.638E-08	9.498E-07	8.246E-06
U-238+D1	Pb-210+D	9.980E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Po-210	9.980E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		1.759E-14	2.633E-13	3.058E-12	7.976E-11	1.861E-09	5.638E-08	9.498E-07	8.246E-06
U-238+D1	U-238+D1	1.317E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	1.317E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	1.317E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D	1.317E-06	2.322E-20	3.476E-19	4.036E-18	1.053E-16	2.456E-15	7.442E-14	1.254E-12	1.088E-11
U-238+D1	Pb-210+D1	1.317E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		2.322E-20	3.476E-19	4.036E-18	1.053E-16	2.456E-15	7.442E-14	1.254E-12	1.088E-11
U-238+D1	U-238+D1	1.896E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	1.896E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	1.896E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D	1.896E-08	3.342E-22	5.003E-21	5.810E-20	1.515E-18	3.535E-17	1.071E-15	1.805E-14	1.567E-13
U-238+D1	Pb-210+D2	1.896E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		3.342E-22	5.003E-21	5.810E-20	1.515E-18	3.535E-17	1.071E-15	1.805E-14	1.567E-13
U-238+D1	U-238+D1	2.096E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	2.096E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	2.096E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D1	2.096E-04	3.694E-18	5.530E-17	6.423E-16	1.675E-14	3.908E-13	1.184E-11	1.995E-10	1.732E-09
U-238+D1	Pb-210+D	2.096E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Po-210	2.096E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		3.694E-18	5.530E-17	6.423E-16	1.675E-14	3.908E-13	1.184E-11	1.995E-10	1.732E-09
U-238+D1	U-238+D1	2.767E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	2.767E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	2.767E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D1	2.767E-10	4.877E-24	7.300E-23	8.478E-22	2.211E-20	5.159E-19	1.563E-17	2.633E-16	2.286E-15
U-238+D1	Pb-210+D1	2.767E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		4.877E-24	7.300E-23	8.478E-22	2.211E-20	5.159E-19	1.563E-17	2.633E-16	2.286E-15
U-238+D1	U-238+D1	3.983E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	3.983E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	3.983E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D1	3.983E-12	7.019E-26	1.051E-24	1.220E-23	3.183E-22	7.426E-21	2.250E-19	3.790E-18	3.291E-17
U-238+D1	Pb-210+D2	3.983E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		7.019E-26	1.051E-24	1.220E-23	3.183E-22	7.426E-21	2.250E-19	3.790E-18	3.291E-17

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.994E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	1.994E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	1.994E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D2	1.994E-04	3.515E-18	5.262E-17	6.111E-16	1.594E-14	3.718E-13	1.127E-11	1.898E-10	1.648E-09
U-238+D1	Pb-210+D	1.994E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Po-210	1.994E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		3.515E-18	5.262E-17	6.111E-16	1.594E-14	3.718E-13	1.127E-11	1.898E-10	1.648E-09
U-238+D1	U-238+D1	2.633E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	2.633E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	2.633E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D2	2.633E-10	4.640E-24	6.945E-23	8.066E-22	2.104E-20	4.908E-19	1.487E-17	2.505E-16	2.175E-15
U-238+D1	Pb-210+D1	2.633E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		4.640E-24	6.945E-23	8.066E-22	2.104E-20	4.908E-19	1.487E-17	2.505E-16	2.175E-15
U-238+D1	U-238+D1	3.789E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	3.789E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	3.789E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D2	3.789E-12	6.678E-26	9.997E-25	1.161E-23	3.029E-22	7.065E-21	2.141E-19	3.606E-18	3.131E-17
U-238+D1	Pb-210+D2	3.789E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		6.678E-26	9.997E-25	1.161E-23	3.029E-22	7.065E-21	2.141E-19	3.606E-18	3.131E-17
U-238+D1	U-238+D1	4.189E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	4.189E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	4.189E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D3	4.189E-08	7.383E-22	1.105E-20	1.284E-19	3.348E-18	7.810E-17	2.367E-15	3.987E-14	3.461E-13
U-238+D1	Pb-210+D	4.189E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Po-210	4.189E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		7.383E-22	1.105E-20	1.284E-19	3.348E-18	7.810E-17	2.367E-15	3.987E-14	3.461E-13
U-238+D1	U-238+D1	5.530E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	5.530E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	5.530E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D3	5.530E-14	9.745E-28	1.459E-26	1.694E-25	4.419E-24	1.031E-22	3.124E-21	5.262E-20	4.569E-19
U-238+D1	Pb-210+D1	5.530E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		9.745E-28	1.459E-26	1.694E-25	4.419E-24	1.031E-22	3.124E-21	5.262E-20	4.569E-19
U-238+D1	U-238+D1	7.959E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	7.959E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	7.959E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D3	7.959E-16	1.403E-29	2.100E-28	2.439E-27	6.361E-26	1.484E-24	4.496E-23	7.575E-22	6.576E-21
U-238+D1	Pb-210+D2	7.959E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		1.403E-29	2.100E-28	2.439E-27	6.361E-26	1.484E-24	4.496E-23	7.575E-22	6.576E-21

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.997E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	1.997E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	1.997E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D4	1.997E-07	3.519E-21	5.268E-20	6.118E-19	1.596E-17	3.723E-16	1.128E-14	1.900E-13	1.650E-12
U-238+D1	Pb-210+D	1.997E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Po-210	1.997E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		3.519E-21	5.268E-20	6.118E-19	1.596E-17	3.723E-16	1.128E-14	1.900E-13	1.650E-12
U-238+D1	U-238+D1	2.636E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	2.636E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	2.636E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D4	2.636E-13	4.645E-27	6.954E-26	8.076E-25	2.107E-23	4.914E-22	1.489E-20	2.508E-19	2.178E-18
U-238+D1	Pb-210+D1	2.636E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		4.645E-27	6.954E-26	8.076E-25	2.107E-23	4.914E-22	1.489E-20	2.508E-19	2.178E-18
U-238+D1	U-238+D1	3.794E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	U-234	3.794E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Th-230	3.794E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	Ra-226+D4	3.794E-15	6.686E-29	1.001E-27	1.162E-26	3.032E-25	7.073E-24	2.143E-22	3.611E-21	3.135E-20
U-238+D1	Pb-210+D2	3.794E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D1	ΣDSR(j)		6.686E-29	1.001E-27	1.162E-26	3.032E-25	7.073E-24	2.143E-22	3.611E-21	3.135E-20

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Nuclide									
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	*7.632E+13	*7.632E+13	*7.632E+13	*7.632E+13	*7.632E+13	*7.632E+13	*7.632E+13	*7.632E+13	*7.632E+13
Po-210	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15
Ra-226	3.189E-01	3.198E-01	3.216E-01	3.281E-01	3.471E-01	4.234E-01	7.457E-01	5.112E+00	
Th-230	1.472E+03	4.912E+02	2.111E+02	7.107E+01	2.517E+01	8.422E+00	3.656E+00	2.333E+00	
U-234	4.804E+08	6.875E+07	1.306E+07	1.481E+06	1.830E+05	1.944E+04	3.219E+03	9.560E+02	
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

*At specific activity limit

Summary : RESRAD Residential (Radon Only)

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Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Pb-210	1.000E+00	0.000E+00	0.000E+00	*7.632E+13	0.000E+00	*7.632E+13
Po-210	1.000E+00	0.000E+00	0.000E+00	*4.472E+15	0.000E+00	*4.472E+15
Ra-226	1.000E+00	0.000E+00	3.763E+01	3.189E-01	3.763E+01	3.189E-01
Th-230	1.000E+00	1.000E+03	5.144E+00	2.333E+00	8.154E-03	1.472E+03
U-234	1.000E+00	1.000E+03	1.255E-02	9.560E+02	2.498E-08	4.804E+08
U-238	1.000E+00	1.000E+03	8.262E-06	*3.361E+05	1.762E-14	*3.361E+05

*At specific activity limit

[illegible]

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-210	U-238	3.200E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-210	U-238	9.980E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-210	U-238	2.096E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-210	U-238	1.994E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-210	U-238	4.189E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-210	U-238	1.997E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-210	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Pb-210	1.900E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Ra-226	1.899E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Ra-226	3.989E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Ra-226	3.795E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Ra-226	7.972E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Ra-226	3.800E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	1.899E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	3.989E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	3.795E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	7.972E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	3.800E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	1.899E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	3.989E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	3.795E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	7.972E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	3.800E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	3.039E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	6.383E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	6.073E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	1.896E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	3.983E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	3.789E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	7.959E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	3.794E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	Ra-226	9.996E-01	3.761E+01	3.750E+01	3.729E+01	3.656E+01	3.456E+01	2.833E+01	1.609E+01	2.346E+00
Ra-226	Ra-226	1.319E-06	4.965E-05	4.951E-05	4.923E-05	4.826E-05	4.561E-05	3.740E-05	2.123E-05	3.097E-06
Ra-226	Th-230	9.996E-01	8.150E-03	2.442E-02	5.682E-02	1.688E-01	4.766E-01	1.424E+00	3.281E+00	5.141E+00
Ra-226	Th-230	1.319E-06	1.076E-08	3.224E-08	7.500E-08	2.228E-07	6.291E-07	1.880E-06	4.331E-06	6.787E-06
Ra-226	Th-230	1.899E-08	1.549E-10	4.640E-10	1.080E-09	3.207E-09	9.056E-09	2.706E-08	6.234E-08	9.769E-08
Ra-226	U-234	9.996E-01	2.497E-08	1.745E-07	9.185E-07	8.100E-06	6.555E-05	6.169E-04	3.726E-03	1.255E-02
Ra-226	U-234	1.319E-06	3.296E-14	2.303E-13	1.212E-12	1.069E-11	8.653E-11	8.143E-10	4.919E-09	1.656E-08
Ra-226	U-234	1.899E-08	4.744E-16	3.315E-15	1.745E-14	1.539E-13	1.245E-12	1.172E-11	7.080E-11	2.384E-10
Ra-226	U-238	1.599E-03	2.819E-17	4.219E-16	4.900E-15	1.278E-13	2.982E-12	9.035E-11	1.522E-09	1.321E-08
Ra-226	U-238	2.111E-09	3.721E-23	5.570E-22	6.468E-21	1.687E-19	3.936E-18	1.193E-16	2.009E-15	1.744E-14
Ra-226	U-238	3.039E-11	5.356E-25	8.017E-24	9.311E-23	2.429E-21	5.665E-20	1.717E-18	2.892E-17	2.511E-16
Ra-226	U-238	9.980E-01	1.759E-14	2.633E-13	3.058E-12	7.976E-11	1.861E-09	5.638E-08	9.498E-07	8.246E-06

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	2.322E-20	3.476E-19	4.036E-18	1.053E-16	2.456E-15	7.442E-14	1.254E-12	1.088E-11
Ra-226	U-238	1.896E-08	3.342E-22	5.003E-21	5.810E-20	1.515E-18	3.535E-17	1.071E-15	1.805E-14	1.567E-13
Ra-226	ΣDOSE(j)		3.762E+01	3.753E+01	3.735E+01	3.673E+01	3.503E+01	2.976E+01	1.937E+01	7.501E+00
Pb-210	Ra-226	1.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Ra-226	2.771E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Ra-226	2.637E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Ra-226	5.538E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Ra-226	2.640E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	1.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	2.771E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	2.637E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	5.538E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	2.640E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	1.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	2.771E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	2.637E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	5.538E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	2.640E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	2.111E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	4.434E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	4.219E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	8.862E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	1.317E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	2.767E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	2.633E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	5.530E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	2.636E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	Ra-226	1.899E-08	7.146E-07	7.126E-07	7.086E-07	6.947E-07	6.566E-07	5.383E-07	3.056E-07	4.458E-08
Ra-226	Ra-226	2.100E-04	7.900E-03	7.878E-03	7.833E-03	7.680E-03	7.258E-03	5.951E-03	3.379E-03	4.929E-04
Ra-226	ΣDOSE(j)		7.901E-03	7.878E-03	7.834E-03	7.681E-03	7.259E-03	5.951E-03	3.379E-03	4.929E-04
Ra-226	Ra-226	2.771E-10	1.043E-08	1.040E-08	1.034E-08	1.014E-08	9.581E-09	7.855E-09	4.460E-09	6.506E-10
Ra-226	Ra-226	3.989E-12	1.501E-10	1.497E-10	1.488E-10	1.459E-10	1.379E-10	1.131E-10	6.419E-11	9.364E-12
Ra-226	ΣDOSE(j)		1.058E-08	1.055E-08	1.049E-08	1.028E-08	9.719E-09	7.968E-09	4.524E-09	6.599E-10
Ra-226	Ra-226	1.998E-04	7.516E-03	7.495E-03	7.453E-03	7.307E-03	6.906E-03	5.662E-03	3.214E-03	4.689E-04
Ra-226	Ra-226	2.637E-10	9.921E-09	9.893E-09	9.838E-09	9.645E-09	9.116E-09	7.474E-09	4.243E-09	6.190E-10
Ra-226	Th-230	1.998E-04	1.629E-06	4.880E-06	1.136E-05	3.373E-05	9.525E-05	2.846E-04	6.557E-04	1.027E-03
Ra-226	Th-230	2.637E-10	2.150E-12	6.442E-12	1.499E-11	4.452E-11	1.257E-10	3.757E-10	8.656E-10	1.356E-09
Ra-226	Th-230	3.795E-12	3.095E-14	9.272E-14	2.157E-13	6.409E-13	1.810E-12	5.408E-12	1.246E-11	1.952E-11
Ra-226	U-234	1.998E-04	4.989E-12	3.486E-11	1.835E-10	1.619E-09	1.310E-08	1.233E-07	7.446E-07	2.508E-06
Ra-226	U-234	2.637E-10	6.586E-18	4.602E-17	2.423E-16	2.137E-15	1.729E-14	1.627E-13	9.829E-13	3.310E-12
Ra-226	U-234	3.795E-12	9.480E-20	6.624E-19	3.487E-18	3.075E-17	2.489E-16	2.342E-15	1.415E-14	4.764E-14
Ra-226	U-238	3.196E-07	5.633E-21	8.432E-20	9.793E-19	2.554E-17	5.959E-16	1.806E-14	3.042E-13	2.641E-12
Ra-226	U-238	4.219E-13	7.435E-27	1.113E-25	1.293E-24	3.372E-23	7.866E-22	2.383E-20	4.015E-19	3.486E-18

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	1.070E-28	1.602E-27	1.861E-26	4.853E-25	1.132E-23	3.431E-22	5.779E-21	5.017E-20
Ra-226	U-238	1.994E-04	3.515E-18	5.262E-17	6.111E-16	1.594E-14	3.718E-13	1.127E-11	1.898E-10	1.648E-09
Ra-226	U-238	2.633E-10	4.640E-24	6.945E-23	8.066E-22	2.104E-20	4.908E-19	1.487E-17	2.505E-16	2.175E-15
Ra-226	U-238	3.789E-12	6.678E-26	9.997E-25	1.161E-23	3.029E-22	7.065E-21	2.141E-19	3.606E-18	3.131E-17
Ra-226	ΣDOSE(j)		7.518E-03	7.500E-03	7.464E-03	7.341E-03	7.001E-03	5.947E-03	3.871E-03	1.499E-03
Ra-226	Ra-226	3.795E-12	1.428E-10	1.424E-10	1.416E-10	1.388E-10	1.312E-10	1.076E-10	6.108E-11	8.910E-12
Ra-226	Ra-226	4.196E-08	1.579E-06	1.574E-06	1.565E-06	1.535E-06	1.450E-06	1.189E-06	6.752E-07	9.849E-08
Ra-226	ΣDOSE(j)		1.579E-06	1.574E-06	1.566E-06	1.535E-06	1.451E-06	1.189E-06	6.752E-07	9.850E-08
Ra-226	Ra-226	5.538E-14	2.084E-12	2.078E-12	2.066E-12	2.026E-12	1.915E-12	1.570E-12	8.912E-13	1.300E-13
Ra-226	Ra-226	7.972E-16	3.000E-14	2.991E-14	2.974E-14	2.916E-14	2.756E-14	2.260E-14	1.283E-14	1.871E-15
Ra-226	ΣDOSE(j)		2.114E-12	2.108E-12	2.096E-12	2.055E-12	1.942E-12	1.592E-12	9.041E-13	1.319E-13
Ra-226	Ra-226	2.000E-07	7.525E-06	7.504E-06	7.462E-06	7.316E-06	6.914E-06	5.669E-06	3.218E-06	4.695E-07
Ra-226	Ra-226	2.640E-13	9.933E-12	9.905E-12	9.849E-12	9.657E-12	9.127E-12	7.483E-12	4.248E-12	6.197E-13
Ra-226	Th-230	2.000E-07	1.631E-09	4.886E-09	1.137E-08	3.377E-08	9.536E-08	2.850E-07	6.565E-07	1.029E-06
Ra-226	Th-230	2.640E-13	2.153E-15	6.450E-15	1.501E-14	4.458E-14	1.259E-13	3.761E-13	8.666E-13	1.358E-12
Ra-226	Th-230	3.800E-15	3.098E-17	9.284E-17	2.160E-16	6.416E-16	1.812E-15	5.414E-15	1.247E-14	1.955E-14
Ra-226	U-234	2.000E-07	4.996E-15	3.491E-14	1.838E-13	1.621E-12	1.312E-11	1.234E-10	7.455E-10	2.511E-09
Ra-226	U-234	2.640E-13	6.594E-21	4.608E-20	2.426E-19	2.139E-18	1.731E-17	1.629E-16	9.841E-16	3.314E-15
Ra-226	U-234	3.800E-15	9.491E-23	6.632E-22	3.492E-21	3.079E-20	2.492E-19	2.345E-18	1.417E-17	4.770E-17
Ra-226	U-238	3.200E-10	5.640E-24	8.442E-23	9.805E-22	2.558E-20	5.966E-19	1.808E-17	3.045E-16	2.644E-15
Ra-226	U-238	4.224E-16	7.444E-30	1.114E-28	1.294E-27	3.376E-26	7.875E-25	2.386E-23	4.020E-22	3.490E-21
Ra-226	U-238	6.080E-18	0.000E+00	1.604E-30	1.863E-29	4.859E-28	1.134E-26	3.435E-25	5.786E-24	5.023E-23
Ra-226	U-238	1.997E-07	3.519E-21	5.268E-20	6.118E-19	1.596E-17	3.723E-16	1.128E-14	1.900E-13	1.650E-12
Ra-226	U-238	2.636E-13	4.645E-27	6.954E-26	8.076E-25	2.107E-23	4.914E-22	1.489E-20	2.508E-19	2.178E-18
Ra-226	U-238	3.794E-15	6.686E-29	1.001E-27	1.162E-26	3.032E-25	7.073E-24	2.143E-22	3.611E-21	3.135E-20
Ra-226	ΣDOSE(j)		7.527E-06	7.509E-06	7.473E-06	7.349E-06	7.009E-06	5.954E-06	3.876E-06	1.501E-06
Ra-226	Ra-226	3.800E-15	1.430E-13	1.426E-13	1.418E-13	1.390E-13	1.314E-13	1.077E-13	6.115E-14	8.920E-15
Th-230	Th-230	9.996E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Th-230	1.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	9.996E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	1.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	1.899E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	2.100E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	2.771E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	3.989E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	1.998E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	2.637E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	3.795E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	4.196E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	5.538E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	7.972E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	2.000E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	2.640E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	3.800E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	2.111E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	3.039E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	3.359E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	4.434E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	6.383E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	3.196E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	4.219E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	6.073E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	6.713E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	8.862E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	3.200E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	9.980E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	1.317E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	1.896E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	2.096E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	2.767E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	3.983E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	1.994E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	2.633E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	3.789E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	4.189E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	5.530E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	7.959E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	1.997E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	2.636E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	3.794E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Th-230	1.899E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Th-230	2.100E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	Th-230	2.100E-04	1.712E-06	5.129E-06	1.194E-05	3.545E-05	1.001E-04	2.991E-04	6.892E-04	1.080E-03
Ra-226	Th-230	3.989E-12	3.253E-14	9.746E-14	2.268E-13	6.736E-13	1.902E-12	5.684E-12	1.310E-11	2.052E-11
Ra-226	U-234	2.100E-04	5.244E-12	3.664E-11	1.929E-10	1.701E-09	1.377E-08	1.296E-07	7.827E-07	2.636E-06
Ra-226	U-234	2.771E-10	6.922E-18	4.837E-17	2.547E-16	2.246E-15	1.817E-14	1.710E-13	1.033E-12	3.479E-12
Ra-226	U-234	3.989E-12	9.964E-20	6.963E-19	3.665E-18	3.232E-17	2.616E-16	2.462E-15	1.487E-14	5.008E-14
Ra-226	U-238	3.359E-07	5.920E-21	8.863E-20	1.029E-18	2.685E-17	6.263E-16	1.898E-14	3.197E-13	2.776E-12
Ra-226	U-238	4.434E-13	7.815E-27	1.170E-25	1.359E-24	3.544E-23	8.267E-22	2.505E-20	4.220E-19	3.664E-18
Ra-226	U-238	6.383E-15	1.125E-28	1.684E-27	1.956E-26	5.101E-25	1.190E-23	3.606E-22	6.074E-21	5.274E-20
Ra-226	U-238	2.096E-04	3.694E-18	5.530E-17	6.423E-16	1.675E-14	3.908E-13	1.184E-11	1.995E-10	1.732E-09
Ra-226	U-238	2.767E-10	4.877E-24	7.300E-23	8.478E-22	2.211E-20	5.159E-19	1.563E-17	2.633E-16	2.286E-15
Ra-226	U-238	3.983E-12	7.019E-26	1.051E-24	1.220E-23	3.183E-22	7.426E-21	2.250E-19	3.790E-18	3.291E-17
Ra-226	ΣDOSE(j)		1.712E-06	5.129E-06	1.194E-05	3.545E-05	1.001E-04	2.993E-04	6.900E-04	1.083E-03

Nuclide (j)	Parent (i)	THF (i)	DOSE (j, t), mrem/yr							
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Th-230	Th-230	2.771E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Th-230	3.989E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDOSE (j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	Th-230	2.771E-10	2.260E-12	6.771E-12	1.575E-11	4.680E-11	1.321E-10	3.949E-10	9.098E-10	1.426E-09
Th-230	Th-230	1.998E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Th-230	2.637E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDOSE (j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Th-230	3.795E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Th-230	4.196E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDOSE (j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	Th-230	4.196E-08	3.421E-10	1.025E-09	2.385E-09	7.085E-09	2.001E-08	5.978E-08	1.377E-07	2.158E-07
Ra-226	Th-230	7.972E-16	6.500E-18	1.948E-17	4.532E-17	1.346E-16	3.801E-16	1.136E-15	2.617E-15	4.100E-15
Ra-226	U-234	4.196E-08	1.048E-15	7.323E-15	3.855E-14	3.400E-13	2.751E-12	2.589E-11	1.564E-10	5.267E-10
Ra-226	U-234	5.538E-14	1.383E-21	9.666E-21	5.089E-20	4.488E-19	3.632E-18	3.418E-17	2.065E-16	6.952E-16
Ra-226	U-234	7.972E-16	1.991E-23	1.391E-22	7.325E-22	6.460E-21	5.228E-20	4.920E-19	2.972E-18	1.001E-17
Ra-226	U-238	6.713E-11	1.183E-24	1.771E-23	2.057E-22	5.365E-21	1.252E-19	3.792E-18	6.389E-17	5.547E-16
Ra-226	U-238	8.862E-17	1.562E-30	2.338E-29	2.715E-28	7.082E-27	1.652E-25	5.006E-24	8.433E-23	7.322E-22
Ra-226	U-238	1.276E-18	0.000E+00	0.000E+00	3.908E-30	1.019E-28	2.378E-27	7.206E-26	1.214E-24	1.054E-23
Ra-226	U-238	4.189E-08	7.383E-22	1.105E-20	1.284E-19	3.348E-18	7.810E-17	2.367E-15	3.987E-14	3.461E-13
Ra-226	U-238	5.530E-14	9.745E-28	1.459E-26	1.694E-25	4.419E-24	1.031E-22	3.124E-21	5.262E-20	4.569E-19
Ra-226	U-238	7.959E-16	1.403E-29	2.100E-28	2.439E-27	6.361E-26	1.484E-24	4.496E-23	7.575E-22	6.576E-21
Ra-226	ΣDOSE (j)		3.421E-10	1.025E-09	2.385E-09	7.085E-09	2.001E-08	5.981E-08	1.379E-07	2.163E-07
Th-230	Th-230	5.538E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Th-230	7.972E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	ΣDOSE (j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	Th-230	5.538E-14	4.516E-16	1.353E-15	3.148E-15	9.352E-15	2.641E-14	7.891E-14	1.818E-13	2.849E-13
Th-230	Th-230	2.000E-07	0.000E+00	0.000E+0						

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	6.713E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	8.862E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	3.200E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	9.980E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	1.317E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	1.896E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	2.096E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	2.767E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	3.983E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	1.994E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	2.633E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	3.789E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	4.189E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	5.530E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	7.959E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	1.997E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	2.636E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	3.794E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-234	1.899E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-234	2.100E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-234	2.771E-10	0							

[illegible]

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	U-238	5.530E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	U-238	7.959E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	U-238	1.997E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	U-238	2.636E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	U-238	3.794E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	1.000E+00	9.676E-01	9.061E-01	7.197E-01	3.728E-01	3.731E-02	5.192E-05	5.222E-15
Pb-210	Pb-210	1.320E-06	1.320E-06	1.277E-06	1.196E-06	9.501E-07	4.922E-07	4.924E-08	6.854E-11	6.893E-21
Pb-210	Ra-226	9.996E-01	0.000E+00	3.066E-02	8.878E-02	2.621E-01	5.669E-01	7.450E-01	4.470E-01	6.266E-02
Pb-210	Ra-226	2.100E-04	0.000E+00	6.440E-06	1.865E-05	5.505E-05	1.191E-04	1.565E-04	9.388E-05	1.316E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	6.127E-06	1.774E-05	5.237E-05	1.133E-04	1.489E-04	8.932E-05	1.252E-05
Pb-210	Ra-226	4.196E-08	0.000E+00	1.287E-09	3.727E-09	1.100E-08	2.380E-08	3.127E-08	1.876E-08	2.630E-09
Pb-210	Ra-226	2.000E-07	0.000E+00	6.134E-09	1.776E-08	5.244E-08	1.134E-07	1.491E-07	8.943E-08	1.254E-08
Pb-210	Th-230	9.996E-01	0.000E+00	6.681E-06	5.872E-05	6.018E-04	4.360E-03	2.602E-02	7.734E-02	1.357E-01
Pb-210	Th-230	2.100E-04	0.000E+00	1.403E-09	1.233E-08	1.264E-07	9.158E-07	5.466E-06	1.624E-05	2.850E-05
Pb-210	Th-230	1.998E-04	0.000E+00	1.335E-09	1.174E-08	1.203E-07	8.713E-07	5.200E-06	1.546E-05	2.712E-05
Pb-210	Th-230	4.196E-08	0.000E+00	2.804E-13	2.465E-12	2.526E-11	1.830E-10	1.092E-09	3.246E-09	5.696E-09
Pb-210	Th-230	2.000E-07	0.000E+00	1.337E-12	1.175E-11	1.204E-10	8.724E-10	5.206E-09	1.547E-08	2.715E-08
Pb-210	U-234	9.996E-01	0.000E+00	2.052E-11	5.434E-10	1.883E-08	4.240E-07	9.087E-06	8.090E-05	3.195E-04
Pb-210	U-234	2.100E-04	0.000E+00	4.310E-15	1.141E-13	3.955E-12	8.905E-11	1.909E-09	1.699E-08	6.712E-08
Pb-210	U-234	1.998E-04	0.000E+00	4.101E-15	1.086E-13	3.763E-12	8.473E-11	1.816E-09	1.617E-08	6.386E-08
Pb-210	U-234	4.196E-08	0.000E+00	8.614E-19	2.281E-17	7.903E-16	1.780E-14	3.814E-13	3.396E-12	1.341E-11
Pb-210	U-234	2.000E-07	0.000E+00	4.106E-18	1.087E-16	3.767E-15	8.483E-14	1.818E-12	1.619E-11	6.394E-11
Pb-210	U-238	1.599E-03	0.000E+00	2.320E-20	1.848E-18	2.153E-16	1.486E-14	1.116E-12	3.044E-11	3.212E-10
Pb-210	U-238	3.359E-07	0.000E+00	4.874E-24	3.882E-22	4.522E-20	3.121E-18	2.343E-16	6.394E-15	6.746E-14
Pb-210	U-238	3.196E-07	0.000E+00	4.637E-24	3.693E-22	4.302E-20	2.970E-18	2.229E-16	6.084E-15	6.419E-14
Pb-210	U-238	6.713E-11	0.000E+00	9.740E-28	7.758E-26	9.036E-24	6.238E-22	4.683E-20	1.278E-18	1.348E-17
Pb-210	U-238	3.200E-10	0.000E+00	4.643E-27	3.698E-25	4.307E-23	2.973E-21	2.232E-19	6.091E-18	6.426E-17
Pb-210	U-238	9.980E-01	0.000E+00	1.448E-17	1.153E-15	1.343E-13	9.273E-12	6.961E-10	1.900E-08	2.004E-07
Pb-210	U-238	2.096E-04	0.000E+00	3.041E-21	2.422E-19	2.822E-17	1.948E-15	1.462E-13	3.990E-12	4.210E-11
Pb-210	U-238	1.994E-04	0.000E+00	2.894E-21	2.305E-19	2.685E-17	1.853E-15	1.391E-13	3.796E-12	4.005E-11
Pb-210	U-238	4.189E-08	0.000E+00	6.078E-25	4.841E-23	5.639E-21	3.893E-19	2.922E-17	7.974E-16	8.413E-15
Pb-210	U-238	1.997E-07	0.000E+00	2.897E-24	2.308E-22	2.688E-20	1.855E-18	1.393E-16	3.801E-15	4.010E-14
Pb-210	ΣS(j):		1.000E+00	9.983E-01	9.949E-01	9.825E-01	9.444E-01	8.086E-01	5.246E-01	1.988E-01
Po-210	Pb-210	1.000E+00	0.000E+00	8.172E-01	9.104E-01	7.263E-01	3.763E-01	3.765E-02	5.240E-05	5.269E-15
Po-210	Po-210	1.000E+00	1.000E+00	1.579E-01	3.935E-03	9.623E-09	8.911E-25	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	0.000E+00	1.660E-02	7.271E-02	2.479E-01	5.564E-01	7.389E-01	4.437E-01	6.220E-02
Po-210	Ra-226	2.100E-04	0.000E+00	3.486E-06	1.527E-05	5.206E-05	1.169E-04	1.552E-04	9.319E-05	1.307E-05
Po-210	Ra-226	1.998E-04	0.000E+00	3.317E-06	1.453E-05	4.953E-05	1.112E-04	1.477E-04	8.867E-05	1.243E-05
Po-210	Ra-226	4.196E-08	0.000E+00	6.967E-10	3.052E-09	1.040E-08	2.336E-08	3.101E-08	1.862E-08	2.611E-09
Po-210	Ra-226	2.000E-07	0.000E+00	3.321E-09	1.455E-08	4.959E-08	1.113E-07	1.478E-07	8.877E-08	1.245E-08
Po-210	Th-230	9.996E-01	0.000E+00	2.726E-06	4.114E-05	5.383E-04	4.191E-03	2.562E-02	7.655E-02	1.345E-01
Po-210	Th-230	2.100E-04	0.000E+00	5.727E-10	8.641E-09	1.131E-07	8.803E-07	5.381E-06	1.608E-05	2.825E-05
Po-210	Th-230	1.998E-04	0.000E+00	5.448E-10	8.221E-09	1.076E-07	8.375E-07	5.120E-06	1.530E-05	2.687E-05
Po-210	Th-230	4.196E-08	0.000E+00	1.144E-13	1.727E-12	2.260E-11	1.759E-10	1.075E-09	3.213E-09	5.645E-09
Po-210	Th-230	2.000E-07	0.000E+00	5.455E-13	8.231E-12	1.077E-10	8.386E-10	5.126E-09	1.532E-08	2.691E-08
Po-210	U-234	9.996E-01	0.000E+00	6.770E-12	3.343E-10	1.601E-08	4.001E-07	8.895E-06	7.995E-05	3.166E-04
Po-210	U-234	2.100E-04	0.000E+00	1.422E-15	7.021E-14	3.363E-12	8.403E-11	1.868E-09	1.679E-08	6.650E-08
Po-210	U-234	1.998E-04	0.000E+00	1.353E-15	6.680E-14	3.199E-12	7.995E-11	1.778E-09	1.598E-08	6.327E-08
Po-210	U-234	4.196E-08	0.000E+00	2.842E-19	1.403E-17	6.720E-16	1.679E-14	3.734E-13	3.356E-12	1.329E-11
Po-210	U-234	2.000E-07	0.000E+00	1.355E-18	6.688E-17	3.203E-15	8.005E-14	1.780E-12	1.600E-11	6.335E-11
Po-210	U-238	1.599E-03	0.000E+00	6.444E-21	1.016E-18	1.745E-16	1.378E-14	1.086E-12	3.003E-11	3.181E-10
Po-210	U-238	3.359E-07	0.000E+00	1.353E-24	2.133E-22	3.666E-20	2.893E-18	2.281E-16	6.308E-15	6.682E-14
Po-210	U-238	3.196E-07	0.000E+00	1.288E-24	2.030E-22	3.487E-20	2.753E-18	2.170E-16	6.002E-15	6.358E-14

Summary : RESRAD Residential (Radon Only)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	0.000E+00	2.705E-28	4.263E-26	7.325E-24	5.782E-22	4.558E-20	1.261E-18	1.335E-17
Po-210	U-238	3.200E-10	0.000E+00	1.289E-27	2.032E-25	3.492E-23	2.756E-21	2.173E-19	6.009E-18	6.366E-17
Po-210	U-238	9.980E-01	0.000E+00	4.021E-18	6.337E-16	1.089E-13	8.596E-12	6.776E-10	1.874E-08	1.985E-07
Po-210	U-238	2.096E-04	0.000E+00	8.445E-22	1.331E-19	2.287E-17	1.806E-15	1.423E-13	3.936E-12	4.170E-11
Po-210	U-238	1.994E-04	0.000E+00	8.035E-22	1.266E-19	2.176E-17	1.718E-15	1.354E-13	3.745E-12	3.967E-11
Po-210	U-238	4.189E-08	0.000E+00	1.688E-25	2.660E-23	4.571E-21	3.608E-19	2.844E-17	7.866E-16	8.333E-15
Po-210	U-238	1.997E-07	0.000E+00	8.045E-25	1.268E-22	2.179E-20	1.720E-18	1.356E-16	3.750E-15	3.972E-14
Po-210	ΣS(j):		1.000E+00	9.917E-01	9.871E-01	9.748E-01	9.371E-01	8.024E-01	5.206E-01	1.971E-01
Pb-210	Pb-210	1.900E-08	1.900E-08	1.839E-08	1.722E-08	1.368E-08	7.084E-09	7.088E-10	9.865E-13	9.921E-23
Pb-210	Ra-226	1.899E-08	0.000E+00	5.825E-10	1.687E-09	4.979E-09	1.077E-08	1.415E-08	8.492E-09	1.191E-09
Pb-210	Ra-226	3.989E-12	0.000E+00	1.224E-13	3.543E-13	1.046E-12	2.263E-12	2.973E-12	1.784E-12	2.501E-13
Pb-210	Ra-226	3.795E-12	0.000E+00	1.164E-13	3.371E-13	9.951E-13	2.153E-12	2.829E-12	1.697E-12	2.379E-13
Pb-210	Ra-226	7.972E-16	0.000E+00	2.445E-17	7.080E-17	2.090E-16	4.521E-16	5.941E-16	3.565E-16	4.997E-17
Pb-210	Ra-226	3.800E-15	0.000E+00	1.166E-16	3.375E-16	9.963E-16	2.155E-15	2.832E-15	1.699E-15	2.382E-16
Pb-210	Th-230	1.899E-08	0.000E+00	1.269E-13	1.116E-12	1.143E-11	8.284E-11	4.944E-10	1.469E-09	2.578E-09
Pb-210	Th-230	3.989E-12	0.000E+00	2.666E-17	2.344E-16	2.402E-15	1.740E-14	1.038E-13	3.087E-13	5.415E-13
Pb-210	Th-230	3.795E-12	0.000E+00	2.537E-17	2.230E-16	2.285E-15	1.656E-14	9.880E-14	2.937E-13	5.152E-13
Pb-210	Th-230	7.972E-16	0.000E+00	5.328E-21	4.683E-20	4.800E-19	3.477E-18	2.075E-17	6.168E-17	1.082E-16
Pb-210	Th-230	3.800E-15	0.000E+00	2.540E-20	2.232E-19	2.288E-18	1.658E-17	9.892E-17	2.940E-16	5.158E-16
Pb-210	U-234	1.899E-08	0.000E+00	3.899E-19	1.033E-17	3.577E-16	8.056E-15	1.727E-13	1.537E-12	6.071E-12
Pb-210	U-234	3.989E-12	0.000E+00	8.189E-23	2.169E-21	7.514E-20	1.692E-18	3.627E-17	3.229E-16	1.275E-15
Pb-210	U-234	3.795E-12	0.000E+00	7.792E-23	2.063E-21	7.149E-20	1.610E-18	3.450E-17	3.072E-16	1.213E-15
Pb-210	U-234	7.972E-16	0.000E+00	1.637E-26	4.334E-25	1.502E-23	3.381E-22	7.247E-21	6.452E-20	2.548E-19
Pb-210	U-234	3.800E-15	0.000E+00	7.801E-26	2.066E-24	7.158E-23	1.612E-21	3.455E-20	3.076E-19	1.215E-18
Pb-210	U-238	3.039E-11	0.000E+00	4.409E-28	3.512E-26	4.090E-24	2.824E-22	2.120E-20	5.784E-19	6.103E-18
Pb-210	U-238	6.383E-15	0.000E+00	9.261E-32	7.376E-30	8.592E-28	5.931E-26	4.452E-24	1.215E-22	1.282E-21
Pb-210	U-238	6.073E-15	0.000E+00	8.811E-32	7.018E-30	8.174E-28	5.643E-26	4.236E-24	1.156E-22	1.220E-21
Pb-210	U-238	1.276E-18	0.000E+00	1.851E-35	1.474E-33	1.717E-31	1.185E-29	8.897E-28	2.428E-26	2.562E-25
Pb-210	U-238	6.080E-18	0.000E+00	8.821E-35	7.026E-33	8.184E-31	5.650E-29	4.241E-27	1.157E-25	1.221E-24
Pb-210	U-238	1.896E-08	0.000E+00	2.751E-25	2.191E-23	2.552E-21	1.762E-19	1.323E-17	3.609E-16	3.808E-15
Pb-210	U-238	3.983E-12	0.000E+00	5.779E-29	4.603E-27	5.361E-25	3.701E-23	2.778E-21	7.581E-20	7.999E-19
Pb-210	U-238	3.789E-12	0.000E+00	5.498E-29	4.379E-27	5.101E-25	3.521E-23	2.643E-21	7.213E-20	7.610E-19
Pb-210	U-238	7.959E-16	0.000E+00	1.155E-32	9.198E-31	1.071E-28	7.396E-27	5.552E-25	1.515E-23	1.598E-22
Pb-210	U-238	3.794E-15	0.000E+00	5.505E-32	4.384E-30	5.107E-28	3.525E-26	2.646E-24	7.222E-23	7.619E-22
Pb-210	ΣS(j):		1.900E-08	1.897E-08	1.890E-08	1.867E-08	1.794E-08	1.536E-08	9.968E-09	3.776E-09
Ra-226	Ra-226	9.996E-01	9.996E-01	9.968E-01	9.912E-01	9.719E-01	9.189E-01	7.550E-01	4.306E-01	6.037E-02
Ra-226	Ra-226	1.319E-06	1.319E-06	1.316E-06	1.308E-06	1.283E-06	1.213E-06	9.965E-07	5.684E-07	7.968E-08
Ra-226	Th-230	9.996E-01	0.000E+00	4.324E-04	1.294E-03	4.270E-03	1.246E-02	3.773E-02	8.763E-02	1.437E-01
Ra-226	Th-230	1.319E-06	0.000E+00	5.708E-10	1.708E-09	5.636E-09	1.644E-08	4.981E-08	1.157E-07	1.897E-07
Ra-226	Th-230	1.899E-08	0.000E+00	8.216E-12	2.458E-11	8.113E-11	2.367E-10	7.169E-10	1.665E-09	2.731E-09
Ra-226	U-234	9.996E-01	0.000E+00	1.987E-09	1.781E-08	1.951E-07	1.686E-06	1.627E-05	9.938E-05	3.425E-04
Ra-226	U-234	1.319E-06	0.000E+00	2.623E-15	2.351E-14	2.575E-13	2.225E-12	2.147E-11	1.312E-10	4.521E-10
Ra-226	U-234	1.899E-08	0.000E+00	3.775E-17	3.384E-16	3.706E-15	3.203E-14	3.091E-13	1.888E-12	6.508E-12
Ra-226	U-238	1.599E-03	0.000E+00	2.991E-18	8.038E-17	2.928E-15	7.542E-14	2.371E-12	4.053E-11	3.504E-10
Ra-226	U-238	2.111E-09	0.000E+00	3.948E-24	1.061E-22	3.865E-21	9.955E-20	3.130E-18	5.351E-17	4.625E-16
Ra-226	U-238	3.039E-11	0.000E+00	5.683E-26	1.527E-24	5.563E-23	1.433E-21	4.505E-20	7.701E-19	6.657E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.866E-15	5.015E-14	1.827E-12	4.706E-11	1.480E-09	2.529E-08	2.186E-07

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	0.000E+00	2.464E-21	6.620E-20	2.412E-18	6.212E-17	1.953E-15	3.339E-14	2.886E-13
Ra-226	U-238	1.896E-08	0.000E+00	3.546E-23	9.529E-22	3.471E-20	8.941E-19	2.811E-17	4.806E-16	4.154E-15
Ra-226	ΣS(j):		9.996E-01	9.972E-01	9.925E-01	9.762E-01	9.313E-01	7.927E-01	5.184E-01	2.044E-01
Pb-210	Ra-226	1.319E-06	0.000E+00	4.047E-08	1.172E-07	3.459E-07	7.484E-07	9.833E-07	5.900E-07	8.271E-08
Pb-210	Ra-226	2.771E-10	0.000E+00	8.501E-12	2.461E-11	7.266E-11	1.572E-10	2.065E-10	1.239E-10	1.737E-11
Pb-210	Ra-226	2.637E-10	0.000E+00	8.088E-12	2.342E-11	6.913E-11	1.496E-10	1.965E-10	1.179E-10	1.653E-11
Pb-210	Ra-226	5.538E-14	0.000E+00	1.699E-15	4.919E-15	1.452E-14	3.141E-14	4.128E-14	2.476E-14	3.472E-15
Pb-210	Ra-226	2.640E-13	0.000E+00	8.097E-15	2.345E-14	6.922E-14	1.497E-13	1.967E-13	1.180E-13	1.655E-14
Pb-210	Th-230	1.319E-06	0.000E+00	8.818E-12	7.752E-11	7.944E-10	5.755E-09	3.435E-08	1.021E-07	1.791E-07
Pb-210	Th-230	2.771E-10	0.000E+00	1.852E-15	1.628E-14	1.669E-13	1.209E-12	7.215E-12	2.144E-11	3.762E-11
Pb-210	Th-230	2.637E-10	0.000E+00	1.762E-15	1.549E-14	1.588E-13	1.150E-12	6.864E-12	2.040E-11	3.579E-11
Pb-210	Th-230	5.538E-14	0.000E+00	3.702E-19	3.254E-18	3.335E-17	2.416E-16	1.442E-15	4.285E-15	7.518E-15
Pb-210	Th-230	2.640E-13	0.000E+00	1.764E-18	1.551E-17	1.589E-16	1.152E-15	6.872E-15	2.043E-14	3.584E-14
Pb-210	U-234	1.319E-06	0.000E+00	2.709E-17	7.173E-16	2.485E-14	5.597E-13	1.200E-11	1.068E-10	4.218E-10
Pb-210	U-234	2.771E-10	0.000E+00	5.689E-21	1.507E-19	5.220E-18	1.176E-16	2.519E-15	2.243E-14	8.860E-14
Pb-210	U-234	2.637E-10	0.000E+00	5.413E-21	1.433E-19	4.967E-18	1.118E-16	2.397E-15	2.134E-14	8.429E-14
Pb-210	U-234	5.538E-14	0.000E+00	1.137E-24	3.011E-23	1.043E-21	2.349E-20	5.035E-19	4.483E-18	1.771E-17
Pb-210	U-234	2.640E-13	0.000E+00	5.420E-24	1.435E-22	4.973E-21	1.120E-19	2.400E-18	2.137E-17	8.439E-17
Pb-210	U-238	2.111E-09	0.000E+00	3.063E-26	2.440E-24	2.842E-22	1.962E-20	1.473E-18	4.019E-17	4.240E-16
Pb-210	U-238	4.434E-13	0.000E+00	6.434E-30	5.124E-28	5.969E-26	4.120E-24	3.093E-22	8.441E-21	8.905E-20
Pb-210	U-238	4.219E-13	0.000E+00	6.121E-30	4.875E-28	5.679E-26	3.920E-24	2.943E-22	8.031E-21	8.473E-20
Pb-210	U-238	8.862E-17	0.000E+00	1.286E-33	1.024E-31	1.193E-29	8.234E-28	6.181E-26	1.687E-24	1.780E-23
Pb-210	U-238	4.224E-16	0.000E+00	6.129E-33	4.881E-31	5.686E-29	3.925E-27	2.946E-25	8.040E-24	8.483E-23
Pb-210	U-238	1.317E-06	0.000E+00	1.911E-23	1.522E-21	1.773E-19	1.224E-17	9.189E-16	2.508E-14	2.646E-13
Pb-210	U-238	2.767E-10	0.000E+00	4.015E-27	3.198E-25	3.725E-23	2.571E-21	1.930E-19	5.267E-18	5.557E-17
Pb-210	U-238	2.633E-10	0.000E+00	3.820E-27	3.042E-25	3.544E-23	2.446E-21	1.836E-19	5.011E-18	5.287E-17
Pb-210	U-238	5.530E-14	0.000E+00	8.023E-31	6.390E-29	7.443E-27	5.138E-25	3.857E-23	1.053E-21	1.110E-20
Pb-210	U-238	2.636E-13	0.000E+00	3.824E-30	3.046E-28	3.548E-26	2.449E-24	1.838E-22	5.017E-21	5.293E-20
Pb-210	ΣS(j):		0.000E+00	4.050E-08	1.173E-07	3.469E-07	7.544E-07	1.018E-06	6.925E-07	2.624E-07
Ra-226	Ra-226	1.899E-08	1.899E-08	1.894E-08	1.883E-08	1.847E-08	1.746E-08	1.434E-08	8.182E-09	1.147E-09
Ra-226	Ra-226	2.100E-04	2.100E-04	2.094E-04	2.082E-04	2.041E-04	1.930E-04	1.586E-04	9.045E-05	1.268E-05
Ra-226	ΣS(j):		2.100E-04	2.094E-04	2.082E-04	2.042E-04	1.930E-04	1.586E-04	9.046E-05	1.268E-05
Ra-226	Ra-226	2.771E-10	2.771E-10	2.764E-10	2.748E-10	2.695E-10	2.548E-10	2.093E-10	1.194E-10	1.674E-11
Ra-226	Ra-226	3.989E-12	3.989E-12	3.978E-12	3.956E-12	3.879E-12	3.667E-12	3.013E-12	1.719E-12	2.409E-13
Ra-226	ΣS(j):		2.811E-10	2.803E-10	2.788E-10	2.734E-10	2.584E-10	2.123E-10	1.211E-10	1.698E-11
Ra-226	Ra-226	1.998E-04	1.998E-04	1.992E-04	1.981E-04	1.942E-04	1.836E-04	1.509E-04	8.606E-05	1.206E-05
Ra-226	Ra-226	2.637E-10	2.637E-10	2.629E-10	2.615E-10	2.564E-10	2.424E-10	1.991E-10	1.136E-10	1.592E-11
Ra-226	Th-230	1.998E-04	0.000E+00	8.642E-08	2.585E-07	8.533E-07	2.489E-06	7.541E-06	1.751E-05	2.872E-05
Ra-226	Th-230	2.637E-10	0.000E+00	1.141E-13	3.412E-13	1.126E-12	3.286E-12	9.954E-12	2.312E-11	3.792E-11
Ra-226	Th-230	3.795E-12	0.000E+00	1.642E-15	4.912E-15	1.621E-14	4.730E-14	1.433E-13	3.327E-13	5.458E-13
Ra-226	U-234	1.998E-04	0.000E+00	3.971E-13	3.559E-12	3.898E-11	3.368E-10	3.251E-09	1.986E-08	6.845E-08
Ra-226	U-234	2.637E-10	0.000E+00	5.241E-19	4.698E-18	5.146E-17	4.446E-16	4.291E-15	2.622E-14	9.036E-14
Ra-226	U-234	3.795E-12	0.000E+00	7.544E-21	6.762E-20	7.407E-19	6.400E-18	6.177E-17	3.773E-16	1.301E-15
Ra-226	U-238	3.196E-07	0.000E+00	5.977E-22	1.606E-20	5.851E-19	1.507E-17	4.739E-16	8.100E-15	7.002E-14
Ra-226	U-238	4.219E-13	0.000E+00	7.890E-28	2.120E-26	7.724E-25	1.989E-23	6.255E-22	1.069E-20	9.243E-20

Summary : RESRAD Residential (Radon Only)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	0.000E+00	1.136E-29	3.052E-28	1.112E-26	2.864E-25	9.003E-24	1.539E-22	1.330E-21
Ra-226	U-238	1.994E-04	0.000E+00	3.730E-19	1.002E-17	3.651E-16	9.404E-15	2.957E-13	5.055E-12	4.369E-11
Ra-226	U-238	2.633E-10	0.000E+00	4.923E-25	1.323E-23	4.820E-22	1.241E-20	3.903E-19	6.672E-18	5.768E-17
Ra-226	U-238	3.789E-12	0.000E+00	7.087E-27	1.904E-25	6.937E-24	1.787E-22	5.618E-21	9.604E-20	8.302E-19
Ra-226	ΣS(j):		1.998E-04	1.993E-04	1.983E-04	1.951E-04	1.861E-04	1.584E-04	1.036E-04	4.086E-05
Ra-226	Ra-226	3.795E-12	3.795E-12	3.785E-12	3.764E-12	3.690E-12	3.489E-12	2.867E-12	1.635E-12	2.292E-13
Ra-226	Ra-226	4.196E-08	4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	ΣS(j):		4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	Ra-226	5.538E-14	5.538E-14	5.523E-14	5.492E-14	5.385E-14	5.091E-14	4.183E-14	2.386E-14	3.345E-15
Ra-226	Ra-226	7.972E-16	7.972E-16	7.950E-16	7.905E-16	7.751E-16	7.328E-16	6.021E-16	3.434E-16	4.814E-17
Ra-226	ΣS(j):		5.618E-14	5.602E-14	5.571E-14	5.463E-14	5.164E-14	4.243E-14	2.420E-14	3.393E-15
Ra-226	Ra-226	2.000E-07	2.000E-07	1.994E-07	1.983E-07	1.945E-07	1.838E-07	1.511E-07	8.616E-08	1.208E-08
Ra-226	Ra-226	2.640E-13	2.640E-13	2.633E-13	2.618E-13	2.567E-13	2.427E-13	1.994E-13	1.137E-13	1.594E-14
Ra-226	Th-230	2.000E-07	0.000E+00	8.652E-11	2.588E-10	8.543E-10	2.492E-09	7.550E-09	1.753E-08	2.876E-08
Ra-226	Th-230	2.640E-13	0.000E+00	1.142E-16	3.417E-16	1.128E-15	3.290E-15	9.966E-15	2.314E-14	3.796E-14
Ra-226	Th-230	3.800E-15	0.000E+00	1.644E-18	4.918E-18	1.623E-17	4.736E-17	1.434E-16	3.331E-16	5.464E-16
Ra-226	U-234	2.000E-07	0.000E+00	3.975E-16	3.563E-15	3.903E-14	3.372E-13	3.255E-12	1.988E-11	6.853E-11
Ra-226	U-234	2.640E-13	0.000E+00	5.248E-22	4.704E-21	5.152E-20	4.452E-19	4.296E-18	2.625E-17	9.046E-17
Ra-226	U-234	3.800E-15	0.000E+00	7.553E-24	6.770E-23	7.416E-22	6.408E-21	6.184E-20	3.778E-19	1.302E-18
Ra-226	U-238	3.200E-10	0.000E+00	5.984E-25	1.608E-23	5.858E-22	1.509E-20	4.744E-19	8.110E-18	7.011E-17
Ra-226	U-238	4.224E-16	0.000E+00	7.899E-31	2.123E-29	7.733E-28	1.992E-26	6.262E-25	1.071E-23	9.254E-23
Ra-226	U-238	6.080E-18	0.000E+00	1.137E-32	3.056E-31	1.113E-29	2.867E-28	9.014E-27	1.541E-25	1.332E-24
Ra-226	U-238	1.997E-07	0.000E+00	3.734E-22	1.003E-20	3.656E-19	9.416E-18	2.960E-16	5.061E-15	4.375E-14
Ra-226	U-238	2.636E-13	0.000E+00	4.929E-28	1.325E-26	4.826E-25	1.243E-23	3.908E-22	6.680E-21	5.775E-20
Ra-226	U-238	3.794E-15	0.000E+00	7.095E-30	1.907E-28	6.946E-27	1.789E-25	5.625E-24	9.615E-23	8.312E-22
Ra-226	ΣS(j):		2.000E-07	1.995E-07	1.986E-07	1.953E-07	1.863E-07	1.586E-07	1.037E-07	4.091E-08
Ra-226	Ra-226	3.800E-15	3.800E-15	3.789E-15	3.768E-15	3.695E-15	3.493E-15	2.870E-15	1.637E-15	2.295E-16
Th-230	Th-230	9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.984E-01	9.960E-01	9.877E-01
Th-230	Th-230	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.318E-06	1.315E-06	1.304E-06
Th-230	U-234	9.996E-01	0.000E+00	9.176E-06	2.744E-05	9.040E-05	2.624E-04	7.816E-04	1.742E-03	2.644E-03
Th-230	U-234	1.319E-06	0.000E+00	1.211E-11	3.622E-11	1.193E-10	3.464E-10	1.032E-09	2.299E-09	3.490E-09
Th-230	U-234	1.899E-08	0.000E+00	1.743E-13	5.213E-13	1.718E-12	4.986E-12	1.485E-11	3.310E-11	5.023E-11
Th-230	U-234	2.100E-04	0.000E+00	1.927E-09	5.763E-09	1.899E-08	5.512E-08	1.642E-07	3.659E-07	5.553E-07
Th-230	U-234	2.771E-10	0.000E+00	2.544E-15	7.607E-15	2.506E-14	7.275E-14	2.167E-13	4.830E-13	7.330E-13
Th-230	U-234	3.989E-12	0.000E+00	3.662E-17	1.095E-16	3.608E-16	1.047E-15	3.119E-15	6.952E-15	1.055E-14
Th-230	U-234	1.998E-04	0.000E+00	1.834E-09	5.483E-09	1.807E-08	5.244E-08	1.562E-07	3.481E-07	5.283E-07
Th-230	U-234	2.637E-10	0.000E+00	2.421E-15	7.238E-15	2.385E-14	6.922E-14	2.062E-13	4.595E-13	6.974E-13
Th-230	U-234	3.795E-12	0.000E+00	3.484E-17	1.042E-16	3.432E-16	9.963E-16	2.968E-15	6.614E-15	1.004E-14
Th-230	U-234	4.196E-08	0.000E+00	3.852E-13	1.152E-12	3.795E-12	1.101E-11	3.281E-11	7.312E-11	1.110E-10
Th-230	U-234	5.538E-14	0.000E+00	5.084E-19	1.520E-18	5.009E-18	1.454E-17	4.331E-17	9.651E-17	1.465E-16
Th-230	U-234	7.972E-16	0.000E+00	7.318E-21	2.188E-20	7.210E-20	2.093E-19	6.233E-19	1.389E-18	2.108E-18
Th-230	U-234	2.000E-07	0.000E+00	1.836E-12	5.490E-12	1.809E-11	5.250E-11	1.564E-10	3.485E-10	5.290E-10
Th-230	U-234	2.640E-13	0.000E+00	2.424E-18	7.246E-18	2.388E-17	6.930E-17	2.064E-16	4.601E-16	6.982E-16
Th-230	U-234	3.800E-15	0.000E+00	3.488E-20	1.043E-19	3.437E-19	9.975E-19	2.971E-18	6.622E-18	1.005E-17

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	0.000E+00	2.072E-14	1.856E-13	2.031E-12	1.749E-11	1.668E-10	9.884E-10	3.158E-09
Th-230	U-238	2.111E-09	0.000E+00	2.734E-20	2.450E-19	2.680E-18	2.308E-17	2.202E-16	1.305E-15	4.168E-15
Th-230	U-238	3.039E-11	0.000E+00	3.936E-22	3.527E-21	3.858E-20	3.323E-19	3.170E-18	1.878E-17	5.999E-17
Th-230	U-238	3.359E-07	0.000E+00	4.351E-18	3.899E-17	4.265E-16	3.673E-15	3.504E-14	2.076E-13	6.632E-13
Th-230	U-238	4.434E-13	0.000E+00	5.743E-24	5.146E-23	5.630E-22	4.848E-21	4.626E-20	2.740E-19	8.754E-19
Th-230	U-238	6.383E-15	0.000E+00	8.267E-26	7.408E-25	8.104E-24	6.979E-23	6.658E-22	3.945E-21	1.260E-20
Th-230	U-238	3.196E-07	0.000E+00	4.140E-18	3.709E-17	4.058E-16	3.495E-15	3.334E-14	1.975E-13	6.310E-13
Th-230	U-238	4.219E-13	0.000E+00	5.464E-24	4.896E-23	5.357E-22	4.613E-21	4.401E-20	2.607E-19	8.329E-19
Th-230	U-238	6.073E-15	0.000E+00	7.866E-26	7.048E-25	7.710E-24	6.640E-23	6.335E-22	3.753E-21	1.199E-20
Th-230	U-238	6.713E-11	0.000E+00	8.695E-22	7.791E-21	8.524E-20	7.340E-19	7.003E-18	4.149E-17	1.325E-16
Th-230	U-238	8.862E-17	0.000E+00	1.148E-27	1.028E-26	1.125E-25	9.689E-25	9.244E-24	5.476E-23	1.749E-22
Th-230	U-238	1.276E-18	0.000E+00	1.652E-29	1.480E-28	1.620E-27	1.395E-26	1.331E-25	7.883E-25	2.518E-24
Th-230	U-238	3.200E-10	0.000E+00	4.145E-21	3.714E-20	4.063E-19	3.499E-18	3.338E-17	1.978E-16	6.318E-16
Th-230	U-238	4.224E-16	0.000E+00	5.471E-27	4.902E-26	5.363E-25	4.619E-24	4.406E-23	2.610E-22	8.339E-22
Th-230	U-238	6.080E-18	0.000E+00	7.875E-29	7.056E-28	7.720E-27	6.648E-26	6.342E-25	3.757E-24	1.200E-23
Th-230	U-238	9.980E-01	0.000E+00	1.293E-11	1.158E-10	1.267E-09	1.091E-08	1.041E-07	6.168E-07	1.970E-06
Th-230	U-238	1.317E-06	0.000E+00	1.706E-17	1.529E-16	1.673E-15	1.440E-14	1.374E-13	8.141E-13	2.601E-12
Th-230	U-238	1.896E-08	0.000E+00	2.456E-19	2.201E-18	2.408E-17	2.073E-16	1.978E-15	1.172E-14	3.744E-14
Th-230	U-238	2.096E-04	0.000E+00	2.715E-15	2.433E-14	2.662E-13	2.292E-12	2.187E-11	1.295E-10	4.138E-10
Th-230	U-238	2.767E-10	0.000E+00	3.584E-21	3.211E-20	3.513E-19	3.025E-18	2.886E-17	1.710E-16	5.463E-16
Th-230	U-238	3.983E-12	0.000E+00	5.159E-23	4.622E-22	5.057E-21	4.355E-20	4.155E-19	2.461E-18	7.863E-18
Th-230	U-238	1.994E-04	0.000E+00	2.583E-15	2.315E-14	2.532E-13	2.181E-12	2.080E-11	1.233E-10	3.937E-10
Th-230	U-238	2.633E-10	0.000E+00	3.410E-21	3.055E-20	3.343E-19	2.878E-18	2.746E-17	1.627E-16	5.197E-16
Th-230	U-238	3.789E-12	0.000E+00	4.908E-23	4.398E-22	4.811E-21	4.143E-20	3.953E-19	2.342E-18	7.481E-18
Th-230	U-238	4.189E-08	0.000E+00	5.426E-19	4.862E-18	5.319E-17	4.580E-16	4.370E-15	2.589E-14	8.270E-14
Th-230	U-238	5.530E-14	0.000E+00	7.162E-25	6.417E-24	7.021E-23	6.046E-22	5.768E-21	3.417E-20	1.092E-19
Th-230	U-238	7.959E-16	0.000E+00	1.031E-26	9.237E-26	1.011E-24	8.703E-24	8.303E-23	4.919E-22	1.571E-21
Th-230	U-238	1.997E-07	0.000E+00	2.586E-18	2.317E-17	2.535E-16	2.183E-15	2.083E-14	1.234E-13	3.942E-13
Th-230	U-238	2.636E-13	0.000E+00	3.414E-24	3.059E-23	3.347E-22	2.882E-21	2.749E-20	1.629E-19	5.204E-19
Th-230	U-238	3.794E-15	0.000E+00	4.914E-26	4.403E-25	4.817E-24	4.148E-23	3.958E-22	2.345E-21	7.490E-21
Th-230	ΣS(j):		9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.977E-01	9.903E-01
Th-230	Th-230	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.897E-08	1.892E-08	1.877E-08
Th-230	Th-230	2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Th-230	ΣS(j):		2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Ra-226	Th-230	2.100E-04	0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.926E-06	1.841E-05	3.019E-05
Ra-226	Th-230	3.989E-12	0.000E+00	1.726E-15	5.163E-15	1.704E-14	4.971E-14	1.506E-13	3.497E-13	5.736E-13
Ra-226	U-234	2.100E-04	0.000E+00	4.173E-13	3.741E-12	4.097E-11	3.540E-10	3.417E-09	2.087E-08	7.195E-08
Ra-226	U-234	2.771E-10	0.000E+00	5.509E-19	4.938E-18	5.408E-17	4.673E-16	4.510E-15	2.755E-14	9.497E-14
Ra-226	U-234	3.989E-12	0.000E+00	7.929E-21	7.107E-20	7.785E-19	6.727E-18	6.492E-17	3.966E-16	1.367E-15
Ra-226	U-238	3.359E-07	0.000E+00	6.282E-22	1.688E-20	6.150E-19	1.584E-17	4.980E-16	8.514E-15	7.360E-14
Ra-226	U-238	4.434E-13	0.000E+00	8.293E-28	2.228E-26	8.118E-25	2.091E-23	6.574E-22	1.124E-20	9.715E-20
Ra-226	U-238	6.383E-15	0.000E+00	1.194E-29	3.208E-28	1.169E-26	3.010E-25	9.463E-24	1.618E-22	1.398E-21
Ra-226	U-238	2.096E-04	0.000E+00	3.920E-19	1.053E-17	3.838E-16	9.885E-15	3.108E-13	5.313E-12	4.592E-11
Ra-226	U-238	2.767E-10	0.000E+00	5.175E-25	1.391E-23	5.066E-22	1.305E-20	4.102E-19	7.013E-18	6.062E-17
Ra-226	U-238	3.983E-12	0.000E+00	7.448E-27	2.002E-25	7.292E-24	1.878E-22	5.905E-21	1.009E-19	8.726E-19
Ra-226	ΣS(j):		0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.929E-06	1.843E-05	3.026E-05

Summary : RESRAD Residential (Radon Only)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE17.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.770E-10	2.768E-10	2.762E-10	2.738E-10
Th-230	Th-230	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.988E-12	3.984E-12	3.975E-12	3.942E-12
Th-230	ΣS(j):		2.811E-10	2.811E-10	2.811E-10	2.811E-10	2.810E-10	2.808E-10	2.801E-10	2.778E-10
Ra-226	Th-230	2.771E-10	0.000E+00	1.199E-13	3.587E-13	1.184E-12	3.454E-12	1.046E-11	2.430E-11	3.985E-11
Th-230	Th-230	1.998E-04	1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	2.637E-10	2.637E-10	2.637E-10	2.637E-10	2.636E-10	2.636E-10	2.634E-10	2.627E-10	2.605E-10
Th-230	ΣS(j):		1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.794E-12	3.791E-12	3.782E-12	3.750E-12
Th-230	Th-230	4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.194E-08	4.191E-08	4.181E-08	4.146E-08
Th-230	ΣS(j):		4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.191E-08	4.181E-08	4.146E-08
Ra-226	Th-230	4.196E-08	0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.229E-10	1.584E-09	3.678E-09	6.033E-09
Ra-226	Th-230	7.972E-16	0.000E+00	3.449E-19	1.032E-18	3.405E-18	9.935E-18	3.009E-17	6.989E-17	1.146E-16
Ra-226	U-234	4.196E-08	0.000E+00	8.340E-17	7.475E-16	8.188E-15	7.075E-14	6.828E-13	4.172E-12	1.438E-11
Ra-226	U-234	5.538E-14	0.000E+00	1.101E-22	9.868E-22	1.081E-20	9.339E-20	9.014E-19	5.506E-18	1.898E-17
Ra-226	U-234	7.972E-16	0.000E+00	1.585E-24	1.420E-23	1.556E-22	1.344E-21	1.297E-20	7.926E-20	2.732E-19
Ra-226	U-238	6.713E-11	0.000E+00	1.255E-25	3.374E-24	1.229E-22	3.166E-21	9.953E-20	1.701E-18	1.471E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.657E-31	4.453E-30	1.622E-28	4.179E-27	1.314E-25	2.246E-24	1.941E-23
Ra-226	U-238	1.276E-18	0.000E+00	2.385E-33	6.410E-32	2.335E-30	6.015E-29	1.891E-27	3.233E-26	2.794E-25
Ra-226	U-238	4.189E-08	0.000E+00	7.834E-23	2.105E-21	7.669E-20	1.975E-18	6.211E-17	1.062E-15	9.178E-15
Ra-226	U-238	5.530E-14	0.000E+00	1.034E-28	2.779E-27	1.012E-25	2.607E-24	8.198E-23	1.401E-21	1.211E-20
Ra-226	U-238	7.959E-16	0.000E+00	1.488E-30	4.000E-29	1.457E-27	3.753E-26	1.180E-24	2.017E-23	1.744E-22
Ra-226	ΣS(j):		0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.230E-10	1.585E-09	3.683E-09	6.048E-09
Th-230	Th-230	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.536E-14	5.532E-14	5.519E-14	5.473E-14
Th-230	Th-230	7.972E-16	7.972E-16	7.972E-16	7.972E-16	7.971E-16	7.969E-16	7.962E-16	7.943E-16	7.877E-16
Th-230	ΣS(j):		5.618E-14	5.618E-14	5.618E-14	5.618E-14	5.616E-14	5.611E-14	5.598E-14	5.551E-14
Ra-226	Th-230	5.538E-14	0.000E+00	2.396E-17	7.168E-17	2.366E-16	6.902E-16	2.091E-15	4.855E-15	7.964E-15
Th-230	Th-230	2.000E-07	2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.639E-13	2.637E-13	2.631E-13	2.609E-13
Th-230	ΣS(j):		2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.799E-15	3.795E-15	3.786E-15	3.755E-15
U-234	U-234	9.996E-01	9.996E-01	9.963E-01	9.897E-01	9.669E-01	9.048E-01	7.171E-01	3.690E-01	3.607E-02
U-234	U-234	1.319E-06	1.319E-06	1.315E-06	1.306E-06	1.276E-06	1.194E-06	9.465E-07	4.871E-07	4.761E-08
U-234	U-238	1.599E-03	0.000E+00	4.501E-09	1.341E-08	4.368E-08	1.226E-07	3.240E-07	5.003E-07	1.632E-07
U-234	U-238	2.111E-09	0.000E+00	5.941E-15	1.770E-14	5.766E-14	1.619E-13	4.276E-13	6.604E-13	2.154E-13
U-234	U-238	3.039E-11	0.000E+00	8.551E-17	2.548E-16	8.299E-16	2.330E-15	6.155E-15	9.505E-15	3.100E-15
U-234	U-238	3.359E-07	0.000E+00	9.453E-13	2.817E-12	9.175E-12	2.576E-11	6.805E-11	1.051E-10	3.427E-11
U-234	U-238	4.434E-13	0.000E+00	1.248E-18	3.719E-18	1.211E-17	3.400E-17	8.982E-17	1.387E-16	4.524E-17
U-234	U-238	6.383E-15	0.000E+00	1.796E-20	5.353E-20	1.743E-19	4.894E-19	1.293E-18	1.997E-18	6.512E-19
U-234	U-238	3.196E-07	0.000E+00	8.994E-13	2.680E-12	8.729E-12	2.451E-11	6.474E-11	9.997E-11	3.261E-11
U-234	U-238	4.219E-13	0.000E+00	1.187E-18	3.538E-18	1.152E-17	3.235E-17	8.546E-17	1.320E-16	4.304E-17

Summary : RESRAD Residential (Radon Only)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	0.000E+00	1.709E-20	5.093E-20	1.659E-19	4.656E-19	1.230E-18	1.900E-18	6.195E-19
U-234	U-238	6.713E-11	0.000E+00	1.889E-16	5.630E-16	1.834E-15	5.147E-15	1.360E-14	2.100E-14	6.849E-15
U-234	U-238	8.862E-17	0.000E+00	2.494E-22	7.432E-22	2.420E-21	6.794E-21	1.795E-20	2.772E-20	9.040E-21
U-234	U-238	1.276E-18	0.000E+00	3.589E-24	1.070E-23	3.484E-23	9.780E-23	2.584E-22	3.990E-22	1.301E-22
U-234	U-238	3.200E-10	0.000E+00	9.005E-16	2.684E-15	8.740E-15	2.453E-14	6.482E-14	1.001E-13	3.265E-14
U-234	U-238	4.224E-16	0.000E+00	1.189E-21	3.542E-21	1.154E-20	3.239E-20	8.556E-20	1.321E-19	4.309E-20
U-234	U-238	6.080E-18	0.000E+00	1.711E-23	5.099E-23	1.661E-22	4.662E-22	1.232E-21	1.902E-21	6.203E-22
U-234	U-238	9.980E-01	0.000E+00	2.808E-06	8.369E-06	2.726E-05	7.652E-05	2.022E-04	3.122E-04	1.018E-04
U-234	U-238	1.317E-06	0.000E+00	3.707E-12	1.105E-11	3.598E-11	1.010E-10	2.668E-10	4.121E-10	1.344E-10
U-234	U-238	1.896E-08	0.000E+00	5.336E-14	1.590E-13	5.179E-13	1.454E-12	3.841E-12	5.931E-12	1.934E-12
U-234	U-238	2.096E-04	0.000E+00	5.899E-10	1.758E-09	5.725E-09	1.607E-08	4.246E-08	6.557E-08	2.139E-08
U-234	U-238	2.767E-10	0.000E+00	7.787E-16	2.320E-15	7.557E-15	2.122E-14	5.605E-14	8.655E-14	2.823E-14
U-234	U-238	3.983E-12	0.000E+00	1.121E-17	3.340E-17	1.088E-16	3.054E-16	8.068E-16	1.246E-15	4.063E-16
U-234	U-238	1.994E-04	0.000E+00	5.612E-10	1.673E-09	5.447E-09	1.529E-08	4.040E-08	6.238E-08	2.035E-08
U-234	U-238	2.633E-10	0.000E+00	7.408E-16	2.208E-15	7.190E-15	2.018E-14	5.333E-14	8.235E-14	2.686E-14
U-234	U-238	3.789E-12	0.000E+00	1.066E-17	3.178E-17	1.035E-16	2.905E-16	7.676E-16	1.185E-15	3.866E-16
U-234	U-238	4.189E-08	0.000E+00	1.179E-13	3.513E-13	1.144E-12	3.212E-12	8.486E-12	1.310E-11	4.274E-12
U-234	U-238	5.530E-14	0.000E+00	1.556E-19	4.637E-19	1.510E-18	4.240E-18	1.120E-17	1.730E-17	5.641E-18
U-234	U-238	7.959E-16	0.000E+00	2.240E-21	6.675E-21	2.174E-20	6.102E-20	1.612E-19	2.490E-19	8.120E-20
U-234	U-238	1.997E-07	0.000E+00	5.619E-13	1.675E-12	5.454E-12	1.531E-11	4.045E-11	6.246E-11	2.037E-11
U-234	U-238	2.636E-13	0.000E+00	7.417E-19	2.210E-18	7.199E-18	2.021E-17	5.339E-17	8.245E-17	2.689E-17
U-234	U-238	3.794E-15	0.000E+00	1.068E-20	3.182E-20	1.036E-19	2.909E-19	7.685E-19	1.187E-18	3.871E-19
U-234	ΣS(j):		9.996E-01	9.963E-01	9.897E-01	9.670E-01	9.049E-01	7.173E-01	3.693E-01	3.617E-02
U-234	U-234	1.899E-08	1.899E-08	1.893E-08	1.880E-08	1.837E-08	1.719E-08	1.362E-08	7.011E-09	6.853E-10
U-234	U-234	2.100E-04	2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.900E-04	1.506E-04	7.750E-05	7.576E-06
U-234	ΣS(j):		2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.901E-04	1.506E-04	7.751E-05	7.576E-06
U-234	U-234	2.771E-10	2.771E-10	2.762E-10	2.744E-10	2.681E-10	2.509E-10	1.988E-10	1.023E-10	1.000E-11
U-234	U-234	3.989E-12	3.989E-12	3.976E-12	3.950E-12	3.859E-12	3.611E-12	2.862E-12	1.473E-12	1.439E-13
U-234	ΣS(j):		2.811E-10	2.802E-10	2.783E-10	2.719E-10	2.545E-10	2.017E-10	1.038E-10	1.014E-11
U-234	U-234	1.998E-04	1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	2.637E-10	2.637E-10	2.628E-10	2.611E-10	2.551E-10	2.387E-10	1.892E-10	9.733E-11	9.514E-12
U-234	ΣS(j):		1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	3.795E-12	3.795E-12	3.783E-12	3.758E-12	3.671E-12	3.435E-12	2.723E-12	1.401E-12	1.369E-13
U-234	U-234	4.196E-08	4.196E-08	4.182E-08	4.154E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	ΣS(j):		4.196E-08	4.182E-08	4.155E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	U-234	5.538E-14	5.538E-14	5.520E-14	5.484E-14	5.357E-14	5.013E-14	3.973E-14	2.044E-14	1.998E-15
U-234	U-234	7.972E-16	7.972E-16	7.946E-16	7.893E-16	7.712E-16	7.216E-16	5.719E-16	2.943E-16	2.876E-17
U-234	ΣS(j):		5.618E-14	5.600E-14	5.562E-14	5.435E-14	5.085E-14	4.030E-14	2.074E-14	2.027E-15
U-234	U-234	2.000E-07	2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	2.640E-13	2.640E-13	2.631E-13	2.614E-13	2.554E-13	2.390E-13	1.894E-13	9.745E-14	9.526E-15
U-234	ΣS(j):		2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	3.800E-15	3.800E-15	3.787E-15	3.762E-15	3.676E-15	3.440E-15	2.726E-15	1.403E-15	1.371E-16

Summary : RESRAD Residential (Radon Only)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	5.450E-07	5.432E-07	5.396E-07	5.272E-07	4.933E-07	3.911E-07	2.014E-07	1.972E-08
U-238	U-238	1.599E-03	1.599E-03	1.594E-03	1.583E-03	1.547E-03	1.448E-03	1.148E-03	5.909E-04	5.787E-05
U-238	ΣS(j):		1.600E-03	1.595E-03	1.584E-03	1.548E-03	1.448E-03	1.148E-03	5.911E-04	5.789E-05
U-238	U-238	2.111E-09	2.111E-09	2.104E-09	2.090E-09	2.042E-09	1.911E-09	1.515E-09	7.800E-10	7.639E-11
U-238	U-238	3.039E-11	3.039E-11	3.029E-11	3.009E-11	2.940E-11	2.751E-11	2.180E-11	1.123E-11	1.100E-12
U-238	ΣS(j):		2.142E-09	2.134E-09	2.120E-09	2.072E-09	1.939E-09	1.537E-09	7.912E-10	7.749E-11
U-238	U-238	3.359E-07	3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	4.434E-13	4.434E-13	4.420E-13	4.390E-13	4.290E-13	4.014E-13	3.182E-13	1.638E-13	1.605E-14
U-238	ΣS(j):		3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	6.383E-15	6.383E-15	6.362E-15	6.319E-15	6.174E-15	5.778E-15	4.580E-15	2.358E-15	2.310E-16
U-238	U-238	3.196E-07	3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	ΣS(j):		3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	U-238	4.219E-13	4.219E-13	4.205E-13	4.177E-13	4.081E-13	3.819E-13	3.027E-13	1.559E-13	1.527E-14
U-238	U-238	6.073E-15	6.073E-15	6.053E-15	6.012E-15	5.874E-15	5.497E-15	4.357E-15	2.244E-15	2.197E-16
U-238	ΣS(j):		4.280E-13	4.265E-13	4.237E-13	4.140E-13	3.874E-13	3.071E-13	1.581E-13	1.549E-14
U-238	U-238	6.713E-11	6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	8.862E-17	8.862E-17	8.832E-17	8.774E-17	8.572E-17	8.022E-17	6.359E-17	3.274E-17	3.206E-18
U-238	ΣS(j):		6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	1.276E-18	1.276E-18	1.271E-18	1.263E-18	1.234E-18	1.155E-18	9.153E-19	4.712E-19	4.615E-20
U-238	U-238	3.200E-10	3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	ΣS(j):		3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	U-238	4.224E-16	4.224E-16	4.210E-16	4.182E-16	4.086E-16	3.824E-16	3.031E-16	1.561E-16	1.528E-17
U-238	U-238	6.080E-18	6.080E-18	6.060E-18	6.020E-18	5.882E-18	5.504E-18	4.363E-18	2.246E-18	2.200E-19
U-238	ΣS(j):		4.285E-16	4.271E-16	4.242E-16	4.145E-16	3.879E-16	3.075E-16	1.583E-16	1.550E-17
U-238	U-238	9.980E-01	9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.317E-06	1.317E-06	1.313E-06	1.304E-06	1.274E-06	1.192E-06	9.453E-07	4.867E-07	4.767E-08
U-238	ΣS(j):		9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.896E-08	1.896E-08	1.890E-08	1.877E-08	1.834E-08	1.716E-08	1.361E-08	7.005E-09	6.861E-10
U-238	U-238	2.096E-04	2.096E-04	2.089E-04	2.075E-04	2.028E-04	1.898E-04	1.504E-04	7.744E-05	7.585E-06
U-238	ΣS(j):		2.096E-04	2.089E-04	2.076E-04	2.028E-04	1.898E-04	1.504E-04	7.745E-05	7.586E-06
U-238	U-238	2.767E-10	2.767E-10	2.758E-10	2.740E-10	2.677E-10	2.505E-10	1.985E-10	1.022E-10	1.001E-11
U-238	U-238	3.983E-12	3.983E-12	3.970E-12	3.943E-12	3.853E-12	3.605E-12	2.858E-12	1.471E-12	1.441E-13
U-238	ΣS(j):		2.807E-10	2.798E-10	2.779E-10	2.715E-10	2.541E-10	2.014E-10	1.037E-10	1.016E-11
U-238	U-238	1.994E-04	1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	2.633E-10	2.633E-10	2.624E-10	2.607E-10	2.547E-10	2.383E-10	1.889E-10	9.726E-11	9.526E-12
U-238	ΣS(j):		1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	3.789E-12	3.789E-12	3.777E-12	3.752E-12	3.666E-12	3.430E-12	2.719E-12	1.400E-12	1.371E-13

Summary : RESRAD Residential (Radon Only)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	4.189E-08	4.175E-08	4.148E-08	4.052E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	ΣS(j):		4.189E-08	4.176E-08	4.148E-08	4.053E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	U-238	5.530E-14	5.530E-14	5.511E-14	5.475E-14	5.349E-14	5.006E-14	3.968E-14	2.043E-14	2.001E-15
U-238	U-238	7.959E-16	7.959E-16	7.933E-16	7.880E-16	7.699E-16	7.205E-16	5.711E-16	2.941E-16	2.880E-17
U-238	ΣS(j):		5.609E-14	5.591E-14	5.554E-14	5.426E-14	5.078E-14	4.025E-14	2.072E-14	2.030E-15
U-238	U-238	1.997E-07	1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	2.636E-13	2.636E-13	2.627E-13	2.610E-13	2.550E-13	2.386E-13	1.891E-13	9.738E-14	9.537E-15
U-238	ΣS(j):		1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	3.794E-15	3.794E-15	3.781E-15	3.756E-15	3.670E-15	3.434E-15	2.722E-15	1.402E-15	1.373E-16

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 210.48 seconds

Total water/soil iteration failures = 3.350E+02.

RESidual RADioactivity (ResRad) Dose-Modeling Output
Residential - Default

Summary : Residential Default

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Time = 0.000E+00	13
Time = 1.000E+00	14
Time = 3.000E+00	15
Time = 1.000E+01	16
Time = 3.000E+01	17
Time = 1.000E+02	18
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Summary : Residential Default

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1 (1)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1 (2)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1 (3)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1 (4)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1 (5)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1 (6)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1 (7)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1 (8)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1 (9)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1 (10)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1 (11)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1 (12)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1 (13)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1 (14)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1 (15)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1 (16)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1 (17)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1 (18)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1 (19)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1 (20)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.129E-02	2.077E-02	DCF2 (1)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2 (2)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2 (3)
B-1	Po-210	1.580E-02	1.582E-02	DCF2 (4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2 (5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2 (8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2 (11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2 (14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2 (17)
B-1	Th-230	3.760E-01	3.759E-01	DCF2 (20)
B-1	U-234	3.480E-02	3.479E-02	DCF2 (35)
B-1	U-238	2.970E-02	2.973E-02	DCF2 (50)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2 (51)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2 (66)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	2.585E-03	2.575E-03	DCF3 (1)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3 (2)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3 (3)
D-1	Po-210	4.480E-03	4.477E-03	DCF3 (4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3 (8)
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3 (11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3 (14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3 (17)
D-1	Th-230	7.920E-04	7.918E-04	DCF3 (20)
D-1	U-234	1.830E-04	1.831E-04	DCF3 (35)

Summary : Residential Default

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	U-238	1.650E-04	1.650E-04	DCF3(50)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(51)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(66)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(35,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(35,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(35,3)
D-34				

Summary : Residential Default

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(50,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(50,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(50,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(66,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(66,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(66,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(35,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(35,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(50,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(50,2)
D-5				

Summary : Residential Default

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5				
D-5	U-238+D1 , fish	1.000E+01	1.000E+01	BIOFAC(66,1)
D-5	U-238+D1 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(66,2)
D-5				

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Residential Default

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.200E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(35)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(50)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(35)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(50)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.690E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ

Summary : Residential Default

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsat. zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.632E-02	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC (5)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC (20)
R016	Unsat. zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)

Summary : Residential Default

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (35)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (35,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (35)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (35)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (35)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (50)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (50,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (50)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (50)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (50)
R017	Inhalation rate (m**3/yr)	6.192E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	2.600E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.560E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)

Summary : Residential Default

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	3.400E+01	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.130E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.044E+03	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	2.500E-01	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	0.000E+00	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	0.000E+00	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	0.000E+00	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	0.000E+00	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	0.000E+00	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Summary : Residential Default

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary : Residential Default

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Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residential Default

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Pb-210	1.000E+00
Thickness:	2.00 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	1.000E+00
		Th-230	1.000E+00
		U-234	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.120E+01	1.117E+01	1.113E+01	1.097E+01	1.053E+01	9.066E+00	6.084E+00	2.685E+00
M(t):	9.334E-01	9.310E-01	9.273E-01	9.146E-01	8.777E-01	7.555E-01	5.070E-01	2.237E-01

Maximum TDOSE(t): 1.120E+01 mrem/yr at t = 0.000E+00 years

Summary : Residential Default

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.399E-03	0.0002	4.543E-04	0.0000	0.000E+00	0.0000	3.349E-01	0.0299	0.000E+00	0.0000	0.000E+00	0.0000	3.735E+00	0.3335
Po-210	8.100E-06	0.0000	1.115E-04	0.0000	0.000E+00	0.0000	2.316E-02	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	1.549E+00	0.1383
Ra-226	3.287E+00	0.2935	5.523E-04	0.0000	0.000E+00	0.0000	4.768E-01	0.0426	0.000E+00	0.0000	0.000E+00	0.0000	8.395E-01	0.0749
Th-230	1.068E-03	0.0001	5.819E-03	0.0005	0.000E+00	0.0000	9.067E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	6.005E-01	0.0536
U-234	1.145E-04	0.0000	5.377E-04	0.0000	0.000E+00	0.0000	5.173E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	1.385E-01	0.0124
U-238	5.118E-02	0.0046	4.593E-04	0.0000	0.000E+00	0.0000	5.018E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.343E-01	0.0120
Total	3.342E+00	0.2983	7.934E-03	0.0007	0.000E+00	0.0000	8.542E-01	0.0763	0.000E+00	0.0000	0.000E+00	0.0000	6.997E+00	0.6247

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.073E+00	0.3636
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.572E+00	0.1404
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.604E+00	0.4110
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.164E-01	0.0550
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.443E-01	0.0129
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.910E-01	0.0171
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.120E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential Default

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.328E-03	0.0002	5.308E-04	0.0000	0.000E+00	0.0000	3.464E-01	0.0310	0.000E+00	0.0000	0.000E+00	0.0000	4.880E+00	0.4368
Po-210	1.279E-06	0.0000	1.762E-05	0.0000	0.000E+00	0.0000	3.658E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	2.446E-01	0.0219
Ra-226	3.278E+00	0.2934	5.666E-04	0.0001	0.000E+00	0.0000	4.864E-01	0.0435	0.000E+00	0.0000	0.000E+00	0.0000	9.774E-01	0.0875
Th-230	2.490E-03	0.0002	5.819E-03	0.0005	0.000E+00	0.0000	9.275E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	6.009E-01	0.0538
U-234	1.142E-04	0.0000	5.360E-04	0.0000	0.000E+00	0.0000	5.156E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	1.380E-01	0.0124
U-238	5.101E-02	0.0046	4.578E-04	0.0000	0.000E+00	0.0000	5.001E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.339E-01	0.0120
Total	3.334E+00	0.2984	7.928E-03	0.0007	0.000E+00	0.0000	8.559E-01	0.0766	0.000E+00	0.0000	0.000E+00	0.0000	6.975E+00	0.6243

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.229E+00	0.4681
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.483E-01	0.0222
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.742E+00	0.4245
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.184E-01	0.0554
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.438E-01	0.0129
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.903E-01	0.0170
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.117E+01	1.0000

*Sum of all water independent and dependent pathways.

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.181E-03	0.0002	5.132E-04	0.0000	0.000E+00	0.0000	3.277E-01	0.0295	0.000E+00	0.0000	0.000E+00	0.0000	4.794E+00	0.4309
Po-210	3.188E-08	0.0000	4.391E-07	0.0000	0.000E+00	0.0000	9.119E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.098E-03	0.0005
Ra-226	3.260E+00	0.2929	5.962E-04	0.0001	0.000E+00	0.0000	5.047E-01	0.0454	0.000E+00	0.0000	0.000E+00	0.0000	1.277E+00	0.1147
Th-230	5.322E-03	0.0005	5.819E-03	0.0005	0.000E+00	0.0000	9.704E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	6.018E-01	0.0541
U-234	1.135E-04	0.0000	5.325E-04	0.0000	0.000E+00	0.0000	5.122E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	1.371E-01	0.0123
U-238	5.067E-02	0.0046	4.548E-04	0.0000	0.000E+00	0.0000	4.968E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.330E-01	0.0120
Total	3.318E+00	0.2982	7.916E-03	0.0007	0.000E+00	0.0000	8.523E-01	0.0766	0.000E+00	0.0000	0.000E+00	0.0000	6.949E+00	0.6245

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.125E+00	0.4606
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.190E-03	0.0006
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.042E+00	0.4531
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.227E-01	0.0560
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.429E-01	0.0128
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.891E-01	0.0170
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.113E+01	1.0000

*Sum of all water independent and dependent pathways.

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.732E-03	0.0002	4.080E-04	0.0000	0.000E+00	0.0000	2.604E-01	0.0237	0.000E+00	0.0000	0.000E+00	0.0000	3.813E+00	0.3475
Po-210	7.796E-14	0.0000	1.074E-12	0.0000	0.000E+00	0.0000	2.230E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.491E-08	0.0000
Ra-226	3.197E+00	0.2913	6.838E-04	0.0001	0.000E+00	0.0000	5.582E-01	0.0509	0.000E+00	0.0000	0.000E+00	0.0000	2.180E+00	0.1986
Th-230	1.511E-02	0.0014	5.821E-03	0.0005	0.000E+00	0.0000	1.132E-02	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	6.071E-01	0.0553
U-234	1.115E-04	0.0000	5.206E-04	0.0000	0.000E+00	0.0000	5.005E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	1.340E-01	0.0122
U-238	4.951E-02	0.0045	4.443E-04	0.0000	0.000E+00	0.0000	4.854E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.299E-01	0.0118
Total	3.263E+00	0.2973	7.878E-03	0.0007	0.000E+00	0.0000	8.398E-01	0.0765	0.000E+00	0.0000	0.000E+00	0.0000	6.864E+00	0.6254

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.076E+00	0.3714
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.513E-08	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.935E+00	0.5408
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.393E-01	0.0583
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.396E-01	0.0127
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.847E-01	0.0168
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.097E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential Default

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	8.974E-04	0.0001	2.114E-04	0.0000	0.000E+00	0.0000	1.349E-01	0.0128	0.000E+00	0.0000	0.000E+00	0.0000	1.975E+00	0.1876
Po-210	7.219E-30	0.0000	9.942E-29	0.0000	0.000E+00	0.0000	2.065E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.381E-24	0.0000
Ra-226	3.023E+00	0.2870	8.275E-04	0.0001	0.000E+00	0.0000	6.433E-01	0.0611	0.000E+00	0.0000	0.000E+00	0.0000	3.752E+00	0.3563
Th-230	4.204E-02	0.0040	5.826E-03	0.0006	0.000E+00	0.0000	1.658E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	6.335E-01	0.0601
U-234	1.095E-04	0.0000	4.882E-04	0.0000	0.000E+00	0.0000	4.686E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.255E-01	0.0119
U-238	4.633E-02	0.0044	4.158E-04	0.0000	0.000E+00	0.0000	4.543E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.216E-01	0.0115
Total	3.112E+00	0.2955	7.769E-03	0.0007	0.000E+00	0.0000	8.040E-01	0.0763	0.000E+00	0.0000	0.000E+00	0.0000	6.608E+00	0.6274

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.111E+00	0.2005
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.401E-24	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.419E+00	0.7044
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.979E-01	0.0663
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.308E-01	0.0124
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.729E-01	0.0164
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.053E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential Default

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	8.979E-05	0.0000	2.115E-05	0.0000	0.000E+00	0.0000	1.350E-02	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	1.977E-01	0.0218
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.484E+00	0.2740	8.382E-04	0.0001	0.000E+00	0.0000	6.295E-01	0.0694	0.000E+00	0.0000	0.000E+00	0.0000	4.563E+00	0.5033
Th-230	1.252E-01	0.0138	5.847E-03	0.0006	0.000E+00	0.0000	3.646E-02	0.0040	0.000E+00	0.0000	0.000E+00	0.0000	7.684E-01	0.0848
U-234	1.365E-04	0.0000	3.903E-04	0.0000	0.000E+00	0.0000	3.729E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	9.987E-02	0.0110
U-238	3.672E-02	0.0041	3.297E-04	0.0000	0.000E+00	0.0000	3.602E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	9.641E-02	0.0106
Total	2.646E+00	0.2919	7.427E-03	0.0008	0.000E+00	0.0000	6.868E-01	0.0758	0.000E+00	0.0000	0.000E+00	0.0000	5.725E+00	0.6315

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.113E-01	0.0233
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.677E+00	0.8469
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.359E-01	0.1032
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.041E-01	0.0115
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.371E-01	0.0151
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.066E+00	1.0000

*Sum of all water independent and dependent pathways.

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.250E-07	0.0000	2.943E-08	0.0000	0.000E+00	0.0000	1.878E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.751E-04	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.417E+00	0.2329	4.906E-04	0.0001	0.000E+00	0.0000	3.671E-01	0.0603	0.000E+00	0.0000	0.000E+00	0.0000	2.719E+00	0.4470
Th-230	2.894E-01	0.0476	5.890E-03	0.0010	0.000E+00	0.0000	7.881E-02	0.0130	0.000E+00	0.0000	0.000E+00	0.0000	1.080E+00	0.1774
U-234	3.711E-04	0.0001	2.087E-04	0.0000	0.000E+00	0.0000	2.002E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	5.267E-02	0.0087
U-238	1.891E-02	0.0031	1.699E-04	0.0000	0.000E+00	0.0000	1.855E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	4.967E-02	0.0082
Total	1.726E+00	0.2837	6.759E-03	0.0011	0.000E+00	0.0000	4.498E-01	0.0739	0.000E+00	0.0000	0.000E+00	0.0000	3.901E+00	0.6413

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.940E-04	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.699E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.504E+00	0.7403
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.343E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.454E+00	0.2389
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.504E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.525E-02	0.0091
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.663E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.060E-02	0.0116
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.504E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.084E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential Default

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.257E-17	0.0000	2.960E-18	0.0000	0.000E+00	0.0000	1.889E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.767E-14	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.986E-01	0.0740	6.878E-05	0.0000	0.000E+00	0.0000	5.146E-02	0.0192	0.000E+00	0.0000	0.000E+00	0.0000	3.812E-01	0.1420
Th-230	4.740E-01	0.1765	5.906E-03	0.0022	0.000E+00	0.0000	1.266E-01	0.0472	0.000E+00	0.0000	0.000E+00	0.0000	1.429E+00	0.5324
U-234	1.134E-03	0.0004	3.516E-05	0.0000	0.000E+00	0.0000	4.896E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	8.557E-03	0.0032
U-238	1.853E-03	0.0007	1.669E-05	0.0000	0.000E+00	0.0000	1.823E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.877E-03	0.0018
Total	6.756E-01	0.2516	6.026E-03	0.0022	0.000E+00	0.0000	1.787E-01	0.0666	0.000E+00	0.0000	0.000E+00	0.0000	1.824E+00	0.6794

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.672E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.957E-14	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.909E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	6.318E-01	0.2353
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.775E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E+00	0.7583
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.085E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.022E-02	0.0038
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.292E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.934E-03	0.0026
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.500E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.685E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential Default

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr) / (pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Pb-210+D	Pb-210+D	1.000E+00	2.218E+00	2.146E+00	2.010E+00	1.596E+00	8.270E-01	8.275E-02	1.152E-04	1.158E-14	
Pb-210+D	Po-210	1.000E+00	1.855E+00	3.083E+00	3.115E+00	2.479E+00	1.284E+00	1.285E-01	1.789E-04	1.799E-14	
Pb-210+D	ΣDSR(j)		4.073E+00	5.229E+00	5.125E+00	4.076E+00	2.111E+00	2.113E-01	2.940E-04	2.957E-14	
Pb-210+D1	Pb-210+D1	1.320E-06	2.933E-06	2.838E-06	2.657E-06	2.111E-06	1.094E-06	1.094E-07	1.523E-10	1.532E-20	
Pb-210+D2	Pb-210+D2	1.900E-08	4.575E-08	4.427E-08	4.145E-08	3.293E-08	1.706E-08	1.707E-09	2.375E-12	2.389E-22	
Po-210	Po-210	1.000E+00	1.572E+00	2.483E-01	6.190E-03	1.513E-08	1.401E-24	0.000E+00	0.000E+00	0.000E+00	
Ra-226+D	Ra-226+D	9.996E-01	4.543E+00	4.531E+00	4.505E+00	4.418E+00	4.176E+00	3.431E+00	1.957E+00	2.745E-01	
Ra-226+D	Pb-210+D	9.996E-01	3.546E-02	1.035E-01	2.322E-01	6.159E-01	1.290E+00	1.679E+00	1.007E+00	1.412E-01	
Ra-226+D	Po-210	9.996E-01	2.208E-02	1.051E-01	3.012E-01	8.982E-01	1.949E+00	2.563E+00	1.538E+00	2.157E-01	
Ra-226+D	ΣDSR(j)		4.601E+00	4.739E+00	5.039E+00	5.932E+00	7.415E+00	7.673E+00	4.502E+00	6.315E-01	
Ra-226+D	Ra-226+D	1.319E-06	5.997E-06	5.980E-06	5.947E-06	5.831E-06	5.513E-06	4.529E-06	2.584E-06	3.624E-07	
Ra-226+D	Pb-210+D1	1.319E-06	4.689E-08	1.368E-07	3.070E-07	8.144E-07	1.706E-06	2.220E-06	1.331E-06	1.867E-07	
Ra-226+D	ΣDSR(j)		6.044E-06	6.117E-06	6.254E-06	6.646E-06	7.219E-06	6.750E-06	3.915E-06	5.491E-07	
Ra-226+D	Ra-226+D	1.899E-08	8.632E-08	8.608E-08	8.560E-08	8.393E-08	7.935E-08	6.520E-08	3.719E-08	5.216E-09	
Ra-226+D	Pb-210+D2	1.899E-08	7.302E-10	2.133E-09	4.788E-09	1.270E-08	2.661E-08	3.464E-08	2.076E-08	2.913E-09	
Ra-226+D	ΣDSR(j)		8.705E-08	8.821E-08	9.039E-08	9.664E-08	1.060E-07	9.983E-08	5.795E-08	8.129E-09	
Ra-226+D1	Ra-226+D1	2.100E-04	2.061E-03	2.055E-03	2.044E-03	2.004E-03	1.894E-03	1.557E-03	8.879E-04	1.245E-04	
Ra-226+D1	Pb-210+D	2.100E-04	7.448E-06	2.173E-05	4.877E-05	1.294E-04	2.710E-04	3.527E-04	2.114E-04	2.966E-05	
Ra-226+D1	Po-210	2.100E-04	4.637E-06	2.208E-05	6.327E-05	1.887E-04	4.093E-04	5.383E-04	3.230E-04	4.531E-05	
Ra-226+D1	ΣDSR(j)		2.073E-03	2.099E-03	2.156E-03	2.322E-03	2.575E-03	2.447E-03	1.422E-03	1.995E-04	
Ra-226+D1	Ra-226+D1	2.771E-10	2.720E-09	2.713E-09	2.698E-09	2.645E-09	2.501E-09	2.055E-09	1.172E-09	1.643E-10	
Ra-226+D1	Pb-210+D1	2.771E-10	9.848E-12	2.874E-11	6.449E-11	1.711E-10	3.583E-10	4.664E-10	2.796E-10	3.922E-11	
Ra-226+D1	ΣDSR(j)		2.730E-09	2.741E-09	2.762E-09	2.816E-09	2.859E-09	2.521E-09	1.452E-09	2.036E-10	
Ra-226+D1	Ra-226+D1	3.989E-12	3.916E-11	3.905E-11	3.883E-11	3.807E-11	3.599E-11	2.957E-11	1.687E-11	2.365E-12	
Ra-226+D1	Pb-210+D2	3.989E-12	1.534E-13	4.480E-13	1.006E-12	2.668E-12	5.589E-12	7.275E-12	4.361E-12	6.118E-13	
Ra-226+D1	ΣDSR(j)		3.931E-11	3.950E-11	3.983E-11	4.074E-11	4.158E-11	3.685E-11	2.123E-11	2.977E-12	
Ra-226+D2	Ra-226+D2	1.998E-04	8.280E-04	8.257E-04	8.211E-04	8.051E-04	7.611E-04	6.254E-04	3.567E-04	5.004E-05	
Ra-226+D2	Pb-210+D	1.998E-04	7.086E-06	2.068E-05	4.640E-05	1.231E-04	2.578E-04	3.356E-04	2.012E-04	2.822E-05	
Ra-226+D2	Po-210	1.998E-04	4.412E-06	2.100E-05	6.019E-05	1.795E-04	3.894E-04	5.121E-04	3.073E-04	4.311E-05	
Ra-226+D2	ΣDSR(j)		8.395E-04	8.674E-04	9.277E-04	1.108E-03	1.408E-03	1.473E-03	8.652E-04	1.214E-04	
Ra-226+D2	Ra-226+D2	2.637E-10	1.093E-09	1.090E-09	1.084E-09	1.063E-09	1.005E-09	8.255E-10	4.709E-10	6.605E-11	
Ra-226+D2	Pb-210+D1	2.637E-10	9.370E-12	2.734E-11	6.136E-11	1.627E-10	3.409E-10	4.437E-10	2.660E-10	3.732E-11	
Ra-226+D2	ΣDSR(j)		1.102E-09	1.117E-09	1.145E-09	1.225E-09	1.346E-09	1.269E-09	7.369E-10	1.034E-10	

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D2	Ra-226+D2	3.795E-12	1.573E-11	1.569E-11	1.560E-11	1.530E-11	1.446E-11	1.188E-11	6.778E-12	9.507E-13
Ra-226+D2	Pb-210+D2	3.795E-12	1.459E-13	4.263E-13	9.568E-13	2.538E-12	5.318E-12	6.921E-12	4.150E-12	5.820E-13
Ra-226+D2	ΣDSR(j)		1.588E-11	1.611E-11	1.656E-11	1.784E-11	1.978E-11	1.880E-11	1.093E-11	1.533E-12
Ra-226+D3	Ra-226+D3	4.196E-08	3.951E-07	3.940E-07	3.917E-07	3.841E-07	3.632E-07	2.984E-07	1.702E-07	2.386E-08
Ra-226+D3	Pb-210+D	4.196E-08	1.488E-09	4.343E-09	9.746E-09	2.585E-08	5.416E-08	7.048E-08	4.226E-08	5.927E-09
Ra-226+D3	Po-210	4.196E-08	9.267E-10	4.411E-09	1.264E-08	3.770E-08	8.180E-08	1.076E-07	6.455E-08	9.055E-09
Ra-226+D3	ΣDSR(j)		3.975E-07	4.027E-07	4.141E-07	4.477E-07	4.991E-07	4.764E-07	2.770E-07	3.885E-08
Ra-226+D3	Ra-226+D3	5.538E-14	5.215E-13	5.200E-13	5.171E-13	5.070E-13	4.794E-13	3.939E-13	2.247E-13	3.150E-14
Ra-226+D3	Pb-210+D1	5.538E-14	1.968E-15	5.744E-15	1.289E-14	3.418E-14	7.161E-14	9.320E-14	5.588E-14	7.838E-15
Ra-226+D3	ΣDSR(j)		5.234E-13	5.258E-13	5.300E-13	5.412E-13	5.510E-13	4.871E-13	2.805E-13	3.934E-14
Ra-226+D3	Ra-226+D3	7.972E-16	7.506E-15	7.485E-15	7.443E-15	7.298E-15	6.900E-15	5.669E-15	3.234E-15	4.534E-16
Ra-226+D3	Pb-210+D2	7.972E-16	3.065E-17	8.954E-17	2.010E-16	5.332E-16	1.117E-15	1.454E-15	8.716E-16	1.223E-16
Ra-226+D3	ΣDSR(j)		7.537E-15	7.575E-15	7.644E-15	7.832E-15	8.017E-15	7.123E-15	4.105E-15	5.757E-16
Ra-226+D4	Ra-226+D4	2.000E-07	2.541E-07	2.534E-07	2.520E-07	2.471E-07	2.336E-07	1.919E-07	1.095E-07	1.538E-08
Ra-226+D4	Pb-210+D	2.000E-07	7.094E-09	2.070E-08	4.646E-08	1.232E-07	2.581E-07	3.360E-07	2.014E-07	2.825E-08
Ra-226+D4	Po-210	2.000E-07	4.417E-09	2.103E-08	6.027E-08	1.797E-07	3.899E-07	5.128E-07	3.077E-07	4.316E-08
Ra-226+D4	ΣDSR(j)		2.656E-07	2.951E-07	3.587E-07	5.500E-07	8.816E-07	1.041E-06	6.186E-07	8.679E-08
Ra-226+D4	Ra-226+D4	2.640E-13	3.354E-13	3.345E-13	3.326E-13	3.261E-13	3.083E-13	2.533E-13	1.445E-13	2.030E-14
Ra-226+D4	Pb-210+D1	2.640E-13	9.381E-15	2.738E-14	6.143E-14	1.629E-13	3.414E-13	4.443E-13	2.663E-13	3.736E-14
Ra-226+D4	ΣDSR(j)		3.448E-13	3.618E-13	3.940E-13	4.891E-13	6.497E-13	6.976E-13	4.108E-13	5.766E-14
Ra-226+D4	Ra-226+D4	3.800E-15	4.828E-15	4.814E-15	4.787E-15	4.694E-15	4.438E-15	3.646E-15	2.080E-15	2.922E-16
Ra-226+D4	Pb-210+D2	3.800E-15	1.461E-16	4.268E-16	9.580E-16	2.541E-15	5.324E-15	6.930E-15	4.155E-15	5.827E-16
Ra-226+D4	ΣDSR(j)		4.974E-15	5.241E-15	5.745E-15	7.236E-15	9.762E-15	1.058E-14	6.234E-15	8.750E-16
Th-230	Th-230	9.996E-01	6.152E-01	6.152E-01	6.152E-01	6.151E-01	6.150E-01	6.144E-01	6.130E-01	6.079E-01
Th-230	Ra-226+D	9.996E-01	9.796E-04	2.944E-03	6.858E-03	2.039E-02	5.760E-02	1.725E-01	3.993E-01	6.543E-01
Th-230	Pb-210+D	9.996E-01	5.194E-06	3.540E-05	1.815E-04	1.492E-03	1.012E-02	5.906E-02	1.747E-01	3.061E-01
Th-230	Po-210	9.996E-01	2.599E-06	2.886E-05	2.050E-04	2.062E-03	1.497E-02	8.947E-02	2.660E-01	4.668E-01
Th-230	ΣDSR(j)		6.162E-01	6.182E-01	6.224E-01	6.390E-01	6.976E-01	9.355E-01	1.453E+00	2.035E+00
Th-230	Th-230	1.319E-06	8.120E-07	8.120E-07	8.120E-07	8.119E-07	8.117E-07	8.111E-07	8.091E-07	8.024E-07
Th-230	Ra-226+D	1.319E-06	1.293E-09	3.886E-09	9.053E-09	2.691E-08	7.603E-08	2.277E-07	5.270E-07	8.636E-07
Th-230	Pb-210+D1	1.319E-06	6.587E-12	4.592E-11	2.379E-10	1.967E-09	1.336E-08	7.805E-08	2.308E-07	4.046E-07
Th-230	ΣDSR(j)		8.133E-07	8.160E-07	8.213E-07	8.408E-07	9.011E-07	1.117E-06	1.567E-06	2.071E-06
Th-230	Th-230	1.899E-08	1.169E-08	1.169E-08	1.169E-08	1.169E-08	1.168E-08	1.167E-08	1.165E-08	1.155E-08
Th-230	Ra-226+D	1.899E-08	1.861E-11	5.594E-11	1.303E-10	3.873E-10	1.094E-09	3.277E-09	7.586E-09	1.243E-08
Th-230	Pb-210+D2	1.899E-08	1.028E-13	7.165E-13	3.711E-12	3.068E-11	2.085E-10	1.217E-09	3.601E-09	6.311E-09
Th-230	ΣDSR(j)		1.171E-08	1.174E-08	1.182E-08	1.211E-08	1.299E-08	1.617E-08	2.283E-08	3.029E-08

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.100E-04	1.292E-04	1.292E-04	1.292E-04	1.292E-04	1.292E-04	1.291E-04	1.288E-04	1.277E-04
Th-230	Ra-226+D1	2.100E-04	4.456E-07	1.337E-06	3.112E-06	9.249E-06	2.613E-05	7.824E-05	1.811E-04	2.968E-04
Th-230	Pb-210+D	2.100E-04	1.091E-09	7.436E-09	3.812E-08	3.134E-07	2.126E-06	1.241E-05	3.669E-05	6.429E-05
Th-230	Po-210	2.100E-04	5.458E-10	6.061E-09	4.306E-08	4.331E-07	3.144E-06	1.879E-05	5.588E-05	9.805E-05
Th-230	ΣDSR(j)		1.297E-04	1.306E-04	1.324E-04	1.392E-04	1.606E-04	2.385E-04	4.024E-04	5.868E-04
Th-230	Th-230	2.771E-10	1.706E-10	1.706E-10	1.706E-10	1.705E-10	1.705E-10	1.704E-10	1.700E-10	1.685E-10
Th-230	Ra-226+D1	2.771E-10	5.881E-13	1.765E-12	4.109E-12	1.221E-11	3.449E-11	1.033E-10	2.391E-10	3.918E-10
Th-230	Pb-210+D1	2.771E-10	1.384E-15	9.644E-15	4.996E-14	4.131E-13	2.807E-12	1.639E-11	4.849E-11	8.498E-11
Th-230	ΣDSR(j)		1.712E-10	1.723E-10	1.747E-10	1.832E-10	2.078E-10	2.900E-10	4.575E-10	6.453E-10
Th-230	Th-230	3.989E-12	2.455E-12	2.455E-12	2.455E-12	2.455E-12	2.454E-12	2.452E-12	2.446E-12	2.426E-12
Th-230	Ra-226+D1	3.989E-12	8.466E-15	2.540E-14	5.914E-14	1.757E-13	4.964E-13	1.487E-12	3.441E-12	5.639E-12
Th-230	Pb-210+D2	3.989E-12	2.160E-17	1.505E-16	7.795E-16	6.444E-15	4.379E-14	2.557E-13	7.563E-13	1.326E-12
Th-230	ΣDSR(j)		2.464E-12	2.481E-12	2.515E-12	2.637E-12	2.994E-12	4.194E-12	6.644E-12	9.390E-12
Th-230	Th-230	1.998E-04	1.229E-04	1.229E-04	1.229E-04	1.229E-04	1.229E-04	1.228E-04	1.225E-04	1.215E-04
Th-230	Ra-226+D2	1.998E-04	1.784E-07	5.365E-07	1.250E-06	3.715E-06	1.050E-05	3.143E-05	7.277E-05	1.192E-04
Th-230	Pb-210+D	1.998E-04	1.038E-09	7.075E-09	3.627E-08	2.982E-07	2.022E-06	1.180E-05	3.491E-05	6.117E-05
Th-230	Po-210	1.998E-04	5.193E-10	5.767E-09	4.097E-08	4.120E-07	2.992E-06	1.788E-05	5.316E-05	9.328E-05
Th-230	ΣDSR(j)		1.231E-04	1.235E-04	1.243E-04	1.273E-04	1.384E-04	1.839E-04	2.833E-04	3.952E-04
Th-230	Th-230	2.637E-10	1.623E-10	1.623E-10	1.623E-10	1.623E-10	1.622E-10	1.621E-10	1.617E-10	1.603E-10
Th-230	Ra-226+D2	2.637E-10	2.355E-13	7.081E-13	1.650E-12	4.904E-12	1.386E-11	4.149E-11	9.605E-11	1.574E-10
Th-230	Pb-210+D1	2.637E-10	1.316E-15	9.176E-15	4.753E-14	3.930E-13	2.671E-12	1.560E-11	4.613E-11	8.085E-11
Th-230	ΣDSR(j)		1.625E-10	1.630E-10	1.640E-10	1.676E-10	1.787E-10	2.192E-10	3.039E-10	3.986E-10
Th-230	Th-230	3.795E-12	2.336E-12	2.336E-12	2.336E-12	2.336E-12	2.335E-12	2.333E-12	2.327E-12	2.308E-12
Th-230	Ra-226+D2	3.795E-12	3.390E-15	1.019E-14	2.375E-14	7.059E-14	1.994E-13	5.973E-13	1.383E-12	2.266E-12
Th-230	Pb-210+D2	3.795E-12	2.055E-17	1.432E-16	7.416E-16	6.131E-15	4.166E-14	2.433E-13	7.196E-13	1.261E-12
Th-230	ΣDSR(j)		2.339E-12	2.346E-12	2.360E-12	2.412E-12	2.576E-12	3.174E-12	4.430E-12	5.835E-12
Th-230	Th-230	4.196E-08	2.582E-08	2.582E-08	2.582E-08	2.582E-08	2.581E-08	2.579E-08	2.573E-08	2.551E-08
Th-230	Ra-226+D3	4.196E-08	8.540E-11	2.563E-10	5.966E-10	1.773E-09	5.009E-09	1.500E-08	3.472E-08	5.689E-08
Th-230	Pb-210+D	4.196E-08	2.180E-13	1.486E-12	7.618E-12	6.263E-11	4.248E-10	2.479E-09	7.332E-09	1.285E-08
Th-230	Po-210	4.196E-08	1.091E-13	1.211E-12	8.605E-12	8.654E-11	6.284E-10	3.756E-09	1.117E-08	1.959E-08
Th-230	ΣDSR(j)		2.591E-08	2.608E-08	2.643E-08	2.774E-08	3.187E-08	4.702E-08	7.895E-08	1.148E-07
Th-230	Th-230	5.538E-14	3.409E-14	3.409E-14	3.408E-14	3.408E-14	3.407E-14	3.404E-14	3.396E-14	3.368E-14
Th-230	Ra-226+D3	5.538E-14	1.127E-16	3.383E-16	7.876E-16	2.340E-15	6.611E-15	1.980E-14	4.583E-14	7.510E-14
Th-230	Pb-210+D1	5.538E-14	2.765E-19	1.927E-18	9.984E-18	8.255E-17	5.609E-16	3.276E-15	9.690E-15	1.698E-14
Th-230	ΣDSR(j)		3.420E-14	3.443E-14	3.488E-14	3.650E-14	4.125E-14	5.712E-14	8.948E-14	1.258E-13
Th-230	Th-230	7.972E-16	4.906E-16	4.906E-16	4.906E-16	4.906E-16	4.904E-16	4.900E-16	4.889E-16	4.848E-16
Th-230	Ra-226+D3	7.972E-16	1.623E-18	4.869E-18	1.134E-17	3.369E-17	9.516E-17	2.850E-16	6.597E-16	1.081E-15
Th-230	Pb-210+D2	7.972E-16	4.317E-21	3.008E-20	1.558E-19	1.288E-18	8.750E-18	5.110E-17	1.511E-16	2.649E-16
Th-230	ΣDSR(j)		4.923E-16	4.955E-16	5.021E-16	5.255E-16	5.944E-16	8.261E-16	1.300E-15	1.831E-15

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.000E-07	1.231E-07	1.231E-07	1.231E-07	1.231E-07	1.230E-07	1.229E-07	1.226E-07	1.216E-07
Th-230	Ra-226+D4	2.000E-07	5.406E-11	1.638E-10	3.827E-10	1.139E-09	3.220E-09	9.646E-09	2.233E-08	3.660E-08
Th-230	Pb-210+D	2.000E-07	1.039E-12	7.084E-12	3.631E-11	2.985E-10	2.025E-09	1.182E-08	3.495E-08	6.124E-08
Th-230	Po-210	2.000E-07	5.199E-13	5.774E-12	4.102E-11	4.125E-10	2.995E-09	1.790E-08	5.323E-08	9.340E-08
Th-230	ΣDSR(j)		1.231E-07	1.233E-07	1.235E-07	1.249E-07	1.313E-07	1.623E-07	2.331E-07	3.129E-07
Th-230	Th-230	2.640E-13	1.625E-13	1.625E-13	1.625E-13	1.625E-13	1.624E-13	1.623E-13	1.619E-13	1.605E-13
Th-230	Ra-226+D4	2.640E-13	7.136E-17	2.162E-16	5.052E-16	1.504E-15	4.251E-15	1.273E-14	2.948E-14	4.831E-14
Th-230	Pb-210+D1	2.640E-13	1.318E-18	9.187E-18	4.759E-17	3.935E-16	2.674E-15	1.562E-14	4.619E-14	8.094E-14
Th-230	ΣDSR(j)		1.625E-13	1.627E-13	1.630E-13	1.644E-13	1.693E-13	1.906E-13	2.376E-13	2.898E-13
Th-230	Th-230	3.800E-15	2.339E-15	2.339E-15	2.339E-15	2.338E-15	2.338E-15	2.336E-15	2.330E-15	2.311E-15
Th-230	Ra-226+D4	3.800E-15	1.027E-18	3.112E-18	7.272E-18	2.165E-17	6.119E-17	1.833E-16	4.243E-16	6.953E-16
Th-230	Pb-210+D2	3.800E-15	2.058E-20	1.434E-19	7.425E-19	6.138E-18	4.171E-17	2.436E-16	7.205E-16	1.263E-15
Th-230	ΣDSR(j)		2.340E-15	2.342E-15	2.347E-15	2.366E-15	2.441E-15	2.763E-15	3.475E-15	4.269E-15
U-234	U-234	9.996E-01	1.442E-01	1.438E-01	1.428E-01	1.395E-01	1.306E-01	1.035E-01	5.324E-02	5.210E-03
U-234	Th-230	9.996E-01	2.828E-06	8.467E-06	1.969E-05	5.837E-05	1.641E-04	4.830E-04	1.073E-03	1.627E-03
U-234	Ra-226+D	9.996E-01	2.991E-09	2.100E-08	1.108E-07	9.780E-07	7.921E-06	7.471E-05	4.534E-04	1.560E-03
U-234	Pb-210+D	9.996E-01	1.206E-11	1.759E-10	1.994E-09	4.919E-08	1.002E-06	2.074E-05	1.830E-04	7.211E-04
U-234	Po-210	9.996E-01	5.060E-12	1.216E-10	2.005E-09	6.471E-08	1.455E-06	3.123E-05	2.782E-04	1.099E-03
U-234	ΣDSR(j)		1.442E-01	1.438E-01	1.428E-01	1.396E-01	1.307E-01	1.041E-01	5.523E-02	1.022E-02
U-234	U-234	1.319E-06	1.904E-07	1.898E-07	1.885E-07	1.842E-07	1.723E-07	1.366E-07	7.028E-08	6.877E-09
U-234	Th-230	1.319E-06	3.733E-12	1.118E-11	2.599E-11	7.705E-11	2.166E-10	6.376E-10	1.416E-09	2.148E-09
U-234	Ra-226+D	1.319E-06	3.948E-15	2.771E-14	1.462E-13	1.291E-12	1.046E-11	9.861E-11	5.985E-10	2.059E-09
U-234	Pb-210+D1	1.319E-06	1.511E-17	2.264E-16	2.602E-15	6.474E-14	1.322E-12	2.740E-11	2.418E-10	9.530E-10
U-234	ΣDSR(j)		1.904E-07	1.898E-07	1.885E-07	1.843E-07	1.726E-07	1.373E-07	7.254E-08	1.204E-08
U-234	U-234	1.899E-08	2.741E-09	2.731E-09	2.713E-09	2.651E-09	2.481E-09	1.966E-09	1.012E-09	9.899E-11
U-234	Th-230	1.899E-08	5.374E-14	1.609E-13	3.740E-13	1.109E-12	3.117E-12	9.178E-12	2.039E-11	3.092E-11
U-234	Ra-226+D	1.899E-08	5.682E-17	3.989E-16	2.105E-15	1.858E-14	1.505E-13	1.419E-12	8.615E-12	2.963E-11
U-234	Pb-210+D2	1.899E-08	2.359E-19	3.533E-18	4.060E-17	1.010E-15	2.063E-14	4.274E-13	3.772E-12	1.487E-11
U-234	ΣDSR(j)		2.741E-09	2.732E-09	2.714E-09	2.652E-09	2.484E-09	1.977E-09	1.044E-09	1.744E-10
U-234	U-234	2.100E-04	3.030E-05	3.020E-05	3.000E-05	2.931E-05	2.742E-05	2.173E-05	1.118E-05	1.094E-06
U-234	Th-230	2.100E-04	5.941E-10	1.778E-09	4.135E-09	1.226E-08	3.446E-08	1.015E-07	2.254E-07	3.418E-07
U-234	Ra-226+D1	2.100E-04	1.363E-12	9.543E-12	5.029E-11	4.438E-10	3.593E-09	3.389E-08	2.057E-07	7.074E-07
U-234	Pb-210+D	2.100E-04	2.533E-15	3.696E-14	4.188E-13	1.033E-11	2.104E-10	4.356E-09	3.844E-08	1.515E-07
U-234	Po-210	2.100E-04	1.063E-15	2.554E-14	4.212E-13	1.359E-11	3.056E-10	6.561E-09	5.844E-08	2.309E-07
U-234	ΣDSR(j)		3.030E-05	3.020E-05	3.000E-05	2.932E-05	2.746E-05	2.188E-05	1.171E-05	2.526E-06
U-234	U-234	2.771E-10	3.999E-11	3.986E-11	3.960E-11	3.868E-11	3.620E-11	2.869E-11	1.476E-11	1.444E-12
U-234	Th-230	2.771E-10	7.842E-16	2.348E-15	5.458E-15	1.618E-14	4.549E-14	1.339E-13	2.975E-13	4.511E-13
U-234	Ra-226+D1	2.771E-10	1.799E-18	1.260E-17	6.638E-17	5.858E-16	4.743E-15	4.473E-14	2.715E-13	9.338E-13
U-234	Pb-210+D1	2.771E-10	3.173E-21	4.755E-20	5.466E-19	1.360E-17	2.777E-16	5.755E-15	5.080E-14	2.002E-13
U-234	ΣDSR(j)		3.999E-11	3.986E-11	3.960E-11	3.870E-11	3.625E-11	2.887E-11	1.538E-11	3.030E-12

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	3.989E-12	5.756E-13	5.737E-13	5.699E-13	5.568E-13	5.210E-13	4.129E-13	2.125E-13	2.079E-14
U-234	Th-230	3.989E-12	1.129E-17	3.379E-17	7.857E-17	2.330E-16	6.547E-16	1.928E-15	4.282E-15	6.494E-15
U-234	Ra-226+D1	3.989E-12	2.589E-20	1.813E-19	9.555E-19	8.432E-18	6.827E-17	6.439E-16	3.908E-15	1.344E-14
U-234	Pb-210+D2	3.989E-12	4.955E-23	7.421E-22	8.529E-21	2.121E-19	4.332E-18	8.978E-17	7.923E-16	3.123E-15
U-234	ΣDSR(j)		5.756E-13	5.738E-13	5.700E-13	5.571E-13	5.218E-13	4.156E-13	2.215E-13	4.385E-14
U-234	U-234	1.998E-04	2.882E-05	2.873E-05	2.854E-05	2.788E-05	2.609E-05	2.068E-05	1.064E-05	1.041E-06
U-234	Th-230	1.998E-04	5.652E-10	1.692E-09	3.934E-09	1.167E-08	3.278E-08	9.653E-08	2.144E-07	3.252E-07
U-234	Ra-226+D2	1.998E-04	5.445E-13	3.825E-12	2.018E-11	1.782E-10	1.444E-09	1.362E-08	8.263E-08	2.843E-07
U-234	Pb-210+D	1.998E-04	2.410E-15	3.516E-14	3.984E-13	9.829E-12	2.002E-10	4.144E-09	3.657E-08	1.441E-07
U-234	Po-210	1.998E-04	1.011E-15	2.430E-14	4.007E-13	1.293E-11	2.907E-10	6.242E-09	5.560E-08	2.197E-07
U-234	ΣDSR(j)		2.883E-05	2.873E-05	2.854E-05	2.789E-05	2.613E-05	2.080E-05	1.103E-05	2.014E-06
U-234	U-234	2.637E-10	3.805E-11	3.792E-11	3.767E-11	3.681E-11	3.444E-11	2.729E-11	1.405E-11	1.374E-12
U-234	Th-230	2.637E-10	7.461E-16	2.233E-15	5.193E-15	1.540E-14	4.328E-14	1.274E-13	2.831E-13	4.292E-13
U-234	Ra-226+D2	2.637E-10	7.187E-19	5.049E-18	2.664E-17	2.353E-16	1.905E-15	1.797E-14	1.091E-13	3.752E-13
U-234	Pb-210+D1	2.637E-10	3.019E-21	4.524E-20	5.201E-19	1.294E-17	2.642E-16	5.476E-15	4.833E-14	1.905E-13
U-234	ΣDSR(j)		3.805E-11	3.792E-11	3.768E-11	3.682E-11	3.449E-11	2.745E-11	1.449E-11	2.369E-12
U-234	U-234	3.795E-12	5.477E-13	5.459E-13	5.422E-13	5.298E-13	4.957E-13	3.929E-13	2.022E-13	1.978E-14
U-234	Th-230	3.795E-12	1.074E-17	3.215E-17	7.475E-17	2.216E-16	6.229E-16	1.834E-15	4.074E-15	6.178E-15
U-234	Ra-226+D2	3.795E-12	1.035E-20	7.267E-20	3.835E-19	3.386E-18	2.743E-17	2.587E-16	1.570E-15	5.401E-15
U-234	Pb-210+D2	3.795E-12	4.714E-23	7.061E-22	8.114E-21	2.018E-19	4.122E-18	8.541E-17	7.539E-16	2.971E-15
U-234	ΣDSR(j)		5.477E-13	5.459E-13	5.423E-13	5.300E-13	4.964E-13	3.950E-13	2.086E-13	3.433E-14
U-234	U-234	4.196E-08	6.054E-09	6.034E-09	5.994E-09	5.857E-09	5.480E-09	4.343E-09	2.235E-09	2.187E-10
U-234	Th-230	4.196E-08	1.187E-13	3.554E-13	8.264E-13	2.450E-12	6.886E-12	2.028E-11	4.504E-11	6.830E-11
U-234	Ra-226+D3	4.196E-08	2.612E-16	1.829E-15	9.640E-15	8.507E-14	6.888E-13	6.496E-12	3.943E-11	1.356E-10
U-234	Pb-210+D	4.196E-08	5.062E-19	7.385E-18	8.369E-17	2.065E-15	4.205E-14	8.705E-13	7.681E-12	3.027E-11
U-234	Po-210	4.196E-08	2.124E-19	5.104E-18	8.417E-17	2.716E-15	6.107E-14	1.311E-12	1.168E-11	4.615E-11
U-234	ΣDSR(j)		6.055E-09	6.035E-09	5.995E-09	5.859E-09	5.488E-09	4.372E-09	2.339E-09	4.990E-10
U-234	U-234	5.538E-14	7.992E-15	7.965E-15	7.913E-15	7.731E-15	7.234E-15	5.733E-15	2.950E-15	2.887E-16
U-234	Th-230	5.538E-14	1.567E-19	4.691E-19	1.091E-18	3.234E-18	9.090E-18	2.676E-17	5.946E-17	9.015E-17
U-234	Ra-226+D3	5.538E-14	3.447E-22	2.415E-21	1.273E-20	1.123E-19	9.092E-19	8.575E-18	5.204E-17	1.790E-16
U-234	Pb-210+D1	5.538E-14	6.341E-25	9.502E-24	1.092E-22	2.717E-21	5.550E-20	1.150E-18	1.015E-17	4.000E-17
U-234	ΣDSR(j)		7.992E-15	7.966E-15	7.914E-15	7.734E-15	7.244E-15	5.769E-15	3.072E-15	5.978E-16
U-234	U-234	7.972E-16	1.150E-16	1.147E-16	1.139E-16	1.113E-16	1.041E-16	8.252E-17	4.246E-17	4.155E-18
U-234	Th-230	7.972E-16	2.256E-21	6.753E-21	1.570E-20	4.655E-20	1.308E-19	3.852E-19	8.558E-19	1.298E-18
U-234	Ra-226+D3	7.972E-16	4.962E-24	3.475E-23	1.832E-22	1.616E-21	1.309E-20	1.234E-19	7.491E-19	2.577E-18
U-234	Pb-210+D2	7.972E-16	9.902E-27	1.483E-25	1.704E-24	4.239E-23	8.657E-22	1.794E-20	1.583E-19	6.240E-19
U-234	ΣDSR(j)		1.150E-16	1.147E-16	1.139E-16	1.113E-16	1.043E-16	8.305E-17	4.423E-17	8.653E-18

Summary : Residential Default

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.000E-07	2.886E-08	2.876E-08	2.857E-08	2.792E-08	2.612E-08	2.070E-08	1.065E-08	1.042E-09
U-234	Th-230	2.000E-07	5.659E-13	1.694E-12	3.939E-12	1.168E-11	3.282E-11	9.665E-11	2.147E-10	3.256E-10
U-234	Ra-226+D4	2.000E-07	1.635E-16	1.162E-15	6.167E-15	5.462E-14	4.428E-13	4.178E-12	2.536E-11	8.728E-11
U-234	Pb-210+D	2.000E-07	2.413E-18	3.520E-17	3.989E-16	9.841E-15	2.004E-13	4.149E-12	3.661E-11	1.443E-10
U-234	Po-210	2.000E-07	1.012E-18	2.433E-17	4.012E-16	1.295E-14	2.911E-13	6.249E-12	5.567E-11	2.200E-10
U-234	ΣDSR(j)		2.886E-08	2.877E-08	2.858E-08	2.793E-08	2.616E-08	2.081E-08	1.099E-08	1.819E-09
U-234	U-234	2.640E-13	3.809E-14	3.797E-14	3.772E-14	3.685E-14	3.448E-14	2.733E-14	1.406E-14	1.376E-15
U-234	Th-230	2.640E-13	7.470E-19	2.236E-18	5.199E-18	1.542E-17	4.333E-17	1.276E-16	2.834E-16	4.297E-16
U-234	Ra-226+D4	2.640E-13	2.158E-22	1.534E-21	8.141E-21	7.209E-20	5.844E-19	5.514E-18	3.347E-17	1.152E-16
U-234	Pb-210+D1	2.640E-13	3.022E-24	4.530E-23	5.207E-22	1.295E-20	2.645E-19	5.482E-18	4.839E-17	1.907E-16
U-234	ΣDSR(j)		3.810E-14	3.797E-14	3.772E-14	3.687E-14	3.453E-14	2.747E-14	1.443E-14	2.112E-15
U-234	U-234	3.800E-15	5.483E-16	5.465E-16	5.429E-16	5.304E-16	4.963E-16	3.933E-16	2.024E-16	1.981E-17
U-234	Th-230	3.800E-15	1.075E-20	3.219E-20	7.484E-20	2.219E-19	6.237E-19	1.836E-18	4.079E-18	6.186E-18
U-234	Ra-226+D4	3.800E-15	3.106E-24	2.209E-23	1.172E-22	1.038E-21	8.412E-21	7.937E-20	4.818E-19	1.658E-18
U-234	Pb-210+D2	3.800E-15	4.720E-26	7.069E-25	8.124E-24	2.021E-22	4.127E-21	8.552E-20	7.548E-19	2.974E-18
U-234	ΣDSR(j)		5.483E-16	5.465E-16	5.430E-16	5.306E-16	4.970E-16	3.953E-16	2.077E-16	3.062E-17
U-238	U-238	5.450E-07	7.087E-08	7.063E-08	7.017E-08	6.855E-08	6.415E-08	5.085E-08	2.618E-08	2.567E-09
U-238+D	U-238+D	1.599E-03	4.454E-03	4.439E-03	4.410E-03	4.308E-03	4.032E-03	3.196E-03	1.645E-03	1.612E-04
U-238+D	U-234	1.599E-03	3.256E-10	9.740E-10	2.258E-09	6.618E-09	1.799E-08	4.698E-08	7.231E-08	2.358E-08
U-238+D	Th-230	1.599E-03	4.260E-15	2.973E-14	1.564E-13	1.377E-12	1.111E-11	1.036E-10	6.097E-10	1.944E-09
U-238+D	Ra-226+D	1.599E-03	3.367E-18	5.070E-17	5.905E-16	1.543E-14	3.603E-13	1.094E-11	1.852E-10	1.596E-09
U-238+D	Pb-210+D	1.599E-03	1.099E-20	3.309E-19	8.097E-18	5.928E-16	3.574E-14	2.560E-12	6.897E-11	7.251E-10
U-238+D	Po-210	1.599E-03	3.976E-21	2.000E-19	7.362E-18	7.446E-16	5.099E-14	3.833E-12	1.047E-10	1.105E-09
U-238+D	ΣDSR(j)		4.454E-03	4.439E-03	4.410E-03	4.308E-03	4.032E-03	3.196E-03	1.646E-03	1.612E-04
U-238+D	U-238+D	2.111E-09	5.879E-09	5.860E-09	5.821E-09	5.687E-09	5.322E-09	4.218E-09	2.172E-09	2.127E-10
U-238+D	U-234	2.111E-09	4.298E-16	1.286E-15	2.980E-15	8.736E-15	2.375E-14	6.202E-14	9.545E-14	3.113E-14
U-238+D	Th-230	2.111E-09	5.623E-21	3.925E-20	2.065E-19	1.818E-18	1.467E-17	1.367E-16	8.048E-16	2.566E-15
U-238+D	Ra-226+D	2.111E-09	4.445E-24	6.692E-23	7.795E-22	2.037E-20	4.756E-19	1.444E-17	2.445E-16	2.107E-15
U-238+D	Pb-210+D1	2.111E-09	1.361E-26	4.227E-25	1.053E-23	7.791E-22	4.715E-20	3.381E-18	9.115E-17	9.584E-16
U-238+D	ΣDSR(j)		5.879E-09	5.860E-09	5.821E-09	5.687E-09	5.322E-09	4.219E-09	2.172E-09	2.128E-10
U-238+D	U-238+D	3.039E-11	8.462E-11	8.434E-11	8.378E-11	8.186E-11	7.660E-11	6.072E-11	3.126E-11	3.062E-12
U-238+D	U-234	3.039E-11	6.187E-18	1.851E-17	4.290E-17	1.257E-16	3.418E-16	8.927E-16	1.374E-15	4.480E-16
U-238+D	Th-230	3.039E-11	8.094E-23	5.649E-22	2.972E-21	2.617E-20	2.111E-19	1.968E-18	1.158E-17	3.693E-17
U-238+D	Ra-226+D	3.039E-11	6.398E-26	9.632E-25	1.122E-23	2.932E-22	6.845E-21	2.079E-19	3.519E-18	3.033E-17
U-238+D	Pb-210+D2	3.039E-11	2.127E-28	6.598E-27	1.643E-25	1.215E-23	7.355E-22	5.274E-20	1.422E-18	1.495E-17
U-238+D	ΣDSR(j)		8.462E-11	8.434E-11	8.378E-11	8.186E-11	7.660E-11	6.072E-11	3.127E-11	3.063E-12

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	3.359E-07	9.355E-07	9.324E-07	9.262E-07	9.050E-07	8.468E-07	6.713E-07	3.456E-07	3.385E-08
U-238+D	U-234	3.359E-07	6.839E-14	2.046E-13	4.742E-13	1.390E-12	3.779E-12	9.868E-12	1.519E-11	4.953E-12
U-238+D	Th-230	3.359E-07	8.947E-19	6.245E-18	3.285E-17	2.893E-16	2.334E-15	2.176E-14	1.281E-13	4.083E-13
U-238+D	Ra-226+D1	3.359E-07	1.536E-21	2.306E-20	2.682E-19	7.003E-18	1.634E-16	4.963E-15	8.401E-14	7.239E-13
U-238+D	Pb-210+D	3.359E-07	2.308E-24	6.950E-23	1.701E-21	1.245E-19	7.507E-18	5.376E-16	1.449E-14	1.523E-13
U-238+D	Po-210	3.359E-07	8.352E-25	4.201E-23	1.546E-21	1.564E-19	1.071E-17	8.051E-16	2.199E-14	2.322E-13
U-238+D	ΣDSR(j)		9.355E-07	9.324E-07	9.262E-07	9.050E-07	8.468E-07	6.713E-07	3.456E-07	3.386E-08
U-238+D	U-238+D	4.434E-13	1.235E-12	1.231E-12	1.223E-12	1.195E-12	1.118E-12	8.861E-13	4.562E-13	4.468E-14
U-238+D	U-234	4.434E-13	9.028E-20	2.700E-19	6.260E-19	1.835E-18	4.988E-18	1.303E-17	2.005E-17	6.538E-18
U-238+D	Th-230	4.434E-13	1.181E-24	8.243E-24	4.337E-23	3.819E-22	3.081E-21	2.872E-20	1.690E-19	5.389E-19
U-238+D	Ra-226+D1	4.434E-13	2.028E-27	3.044E-26	3.540E-25	9.243E-24	2.158E-22	6.552E-21	1.109E-19	9.556E-19
U-238+D	Pb-210+D1	4.434E-13	2.859E-30	8.878E-29	2.211E-27	1.636E-25	9.903E-24	7.102E-22	1.914E-20	2.013E-19
U-238+D	ΣDSR(j)		1.235E-12	1.231E-12	1.223E-12	1.195E-12	1.118E-12	8.861E-13	4.562E-13	4.469E-14
U-238+D	U-238+D	6.383E-15	1.777E-14	1.772E-14	1.760E-14	1.719E-14	1.609E-14	1.275E-14	6.567E-15	6.432E-16
U-238+D	U-234	6.383E-15	1.299E-21	3.887E-21	9.011E-21	2.641E-20	7.179E-20	1.875E-19	2.886E-19	9.411E-20
U-238+D	Th-230	6.383E-15	1.700E-26	1.187E-25	6.242E-25	5.497E-24	4.435E-23	4.134E-22	2.433E-21	7.757E-21
U-238+D	Ra-226+D1	6.383E-15	2.919E-29	4.382E-28	5.096E-27	1.330E-25	3.106E-24	9.431E-23	1.596E-21	1.375E-20
U-238+D	Pb-210+D2	6.383E-15	4.467E-32	1.386E-30	3.451E-29	2.553E-27	1.545E-25	1.108E-23	2.986E-22	3.140E-21
U-238+D	ΣDSR(j)		1.777E-14	1.772E-14	1.760E-14	1.719E-14	1.609E-14	1.275E-14	6.567E-15	6.433E-16
U-238+D	U-238+D	3.196E-07	8.900E-07	8.871E-07	8.812E-07	8.610E-07	8.057E-07	6.387E-07	3.288E-07	3.221E-08
U-238+D	U-234	3.196E-07	6.507E-14	1.946E-13	4.512E-13	1.323E-12	3.595E-12	9.389E-12	1.445E-11	4.712E-12
U-238+D	Th-230	3.196E-07	8.513E-19	5.942E-18	3.126E-17	2.753E-16	2.221E-15	2.070E-14	1.218E-13	3.884E-13
U-238+D	Ra-226+D2	3.196E-07	6.128E-22	9.233E-21	1.076E-19	2.812E-18	6.566E-17	1.994E-15	3.375E-14	2.909E-13
U-238+D	Pb-210+D	3.196E-07	2.196E-24	6.612E-23	1.618E-21	1.185E-19	7.142E-18	5.115E-16	1.378E-14	1.449E-13
U-238+D	Po-210	3.196E-07	7.946E-25	3.997E-23	1.471E-21	1.488E-19	1.019E-17	7.660E-16	2.092E-14	2.209E-13
U-238+D	ΣDSR(j)		8.900E-07	8.871E-07	8.812E-07	8.610E-07	8.057E-07	6.387E-07	3.288E-07	3.221E-08
U-238+D	U-238+D	4.219E-13	1.175E-12	1.171E-12	1.163E-12	1.137E-12	1.064E-12	8.430E-13	4.341E-13	4.251E-14
U-238+D	U-234	4.219E-13	8.589E-20	2.569E-19	5.956E-19	1.746E-18	4.745E-18	1.239E-17	1.907E-17	6.220E-18
U-238+D	Th-230	4.219E-13	1.124E-24	7.843E-24	4.126E-23	3.634E-22	2.932E-21	2.733E-20	1.608E-19	5.127E-19
U-238+D	Ra-226+D2	4.219E-13	8.089E-28	1.219E-26	1.420E-25	3.712E-24	8.667E-23	2.632E-21	4.455E-20	3.840E-19
U-238+D	Pb-210+D1	4.219E-13	2.721E-30	8.447E-29	2.104E-27	1.557E-25	9.422E-24	6.757E-22	1.821E-20	1.915E-19
U-238+D	ΣDSR(j)		1.175E-12	1.171E-12	1.163E-12	1.137E-12	1.064E-12	8.430E-13	4.341E-13	4.252E-14
U-238+D	U-238+D	6.073E-15	1.691E-14	1.685E-14	1.674E-14	1.636E-14	1.531E-14	1.213E-14	6.248E-15	6.119E-16
U-238+D	U-234	6.073E-15	1.236E-21	3.698E-21	8.573E-21	2.513E-20	6.830E-20	1.784E-19	2.746E-19	8.953E-20
U-238+D	Th-230	6.073E-15	1.617E-26	1.129E-25	5.939E-25	5.230E-24	4.220E-23	3.933E-22	2.315E-21	7.380E-21
U-238+D	Ra-226+D2	6.073E-15	1.164E-29	1.754E-28	2.044E-27	5.343E-26	1.247E-24	3.789E-23	6.413E-22	5.528E-21
U-238+D	Pb-210+D2	6.073E-15	4.250E-32	1.318E-30	3.283E-29	2.429E-27	1.470E-25	1.054E-23	2.841E-22	2.987E-21
U-238+D	ΣDSR(j)		1.691E-14	1.685E-14	1.674E-14	1.636E-14	1.531E-14	1.213E-14	6.248E-15	6.120E-16

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	6.713E-11	1.869E-10	1.863E-10	1.851E-10	1.808E-10	1.692E-10	1.341E-10	6.907E-11	6.765E-12
U-238+D	U-234	6.713E-11	1.367E-17	4.088E-17	9.477E-17	2.778E-16	7.551E-16	1.972E-15	3.035E-15	9.898E-16
U-238+D	Th-230	6.713E-11	1.788E-22	1.248E-21	6.565E-21	5.782E-20	4.665E-19	4.348E-18	2.559E-17	8.159E-17
U-238+D	Ra-226+D3	6.713E-11	2.945E-25	4.420E-24	5.141E-23	1.342E-21	3.133E-20	9.515E-19	1.610E-17	1.388E-16
U-238+D	Pb-210+D	6.713E-11	4.612E-28	1.389E-26	3.399E-25	2.488E-23	1.500E-21	1.074E-19	2.895E-18	3.044E-17
U-238+D	Po-210	6.713E-11	1.669E-28	8.395E-27	3.090E-25	3.126E-23	2.140E-21	1.609E-19	4.394E-18	4.639E-17
U-238+D	ΣDSR(j)		1.869E-10	1.863E-10	1.851E-10	1.808E-10	1.692E-10	1.341E-10	6.907E-11	6.766E-12
U-238+D	U-238+D	8.862E-17	2.468E-16	2.460E-16	2.443E-16	2.387E-16	2.234E-16	1.771E-16	9.117E-17	8.930E-18
U-238+D	U-234	8.862E-17	1.804E-23	5.397E-23	1.251E-22	3.667E-22	9.967E-22	2.603E-21	4.006E-21	1.307E-21
U-238+D	Th-230	8.862E-17	2.360E-28	1.647E-27	8.666E-27	7.632E-26	6.157E-25	5.740E-24	3.378E-23	1.077E-22
U-238+D	Ra-226+D3	8.862E-17	3.887E-31	5.835E-30	6.786E-29	1.772E-27	4.136E-26	1.256E-24	2.126E-23	1.832E-22
U-238+D	Pb-210+D1	8.862E-17	5.714E-34	1.774E-32	4.419E-31	3.270E-29	1.979E-27	1.419E-25	3.826E-24	4.023E-23
U-238+D	ΣDSR(j)		2.468E-16	2.460E-16	2.443E-16	2.387E-16	2.234E-16	1.771E-16	9.117E-17	8.931E-18
U-238+D	U-238+D	1.276E-18	3.552E-18	3.540E-18	3.517E-18	3.436E-18	3.215E-18	2.549E-18	1.312E-18	1.285E-19
U-238+D	U-234	1.276E-18	2.597E-25	7.768E-25	1.801E-24	5.278E-24	1.435E-23	3.747E-23	5.767E-23	1.881E-23
U-238+D	Th-230	1.276E-18	3.397E-30	2.371E-29	1.247E-28	1.099E-27	8.863E-27	8.262E-26	4.863E-25	1.550E-24
U-238+D	Ra-226+D3	1.276E-18	5.595E-33	8.399E-32	9.768E-31	2.550E-29	5.953E-28	1.808E-26	3.060E-25	2.637E-24
U-238+D	Pb-210+D2	1.276E-18	8.926E-36	2.769E-34	6.896E-33	5.102E-31	3.087E-29	2.214E-27	5.968E-26	6.275E-25
U-238+D	ΣDSR(j)		3.552E-18	3.540E-18	3.517E-18	3.436E-18	3.215E-18	2.549E-18	1.312E-18	1.286E-19
U-238+D	U-238+D	3.200E-10	8.911E-10	8.882E-10	8.823E-10	8.620E-10	8.067E-10	6.394E-10	3.292E-10	3.225E-11
U-238+D	U-234	3.200E-10	6.515E-17	1.949E-16	4.517E-16	1.324E-15	3.599E-15	9.400E-15	1.447E-14	4.718E-15
U-238+D	Th-230	3.200E-10	8.523E-22	5.949E-21	3.129E-20	2.756E-19	2.224E-18	2.073E-17	1.220E-16	3.889E-16
U-238+D	Ra-226+D4	3.200E-10	1.827E-25	2.794E-24	3.281E-23	8.610E-22	2.013E-20	6.118E-19	1.036E-17	8.937E-17
U-238+D	Pb-210+D	3.200E-10	2.199E-27	6.620E-26	1.620E-24	1.186E-22	7.151E-21	5.121E-19	1.380E-17	1.451E-16
U-238+D	Po-210	3.200E-10	7.956E-28	4.002E-26	1.473E-24	1.490E-22	1.020E-20	7.670E-19	2.095E-17	2.211E-16
U-238+D	ΣDSR(j)		8.911E-10	8.882E-10	8.823E-10	8.620E-10	8.067E-10	6.394E-10	3.292E-10	3.225E-11
U-238+D	U-238+D	4.224E-16	1.176E-15	1.172E-15	1.165E-15	1.138E-15	1.065E-15	8.440E-16	4.346E-16	4.256E-17
U-238+D	U-234	4.224E-16	8.600E-23	2.572E-22	5.963E-22	1.748E-21	4.751E-21	1.241E-20	1.910E-20	6.228E-21
U-238+D	Th-230	4.224E-16	1.125E-27	7.852E-27	4.131E-26	3.638E-25	2.935E-24	2.736E-23	1.610E-22	5.133E-22
U-238+D	Ra-226+D4	4.224E-16	2.411E-31	3.689E-30	4.330E-29	1.137E-27	2.658E-26	8.076E-25	1.367E-23	1.180E-22
U-238+D	Pb-210+D1	4.224E-16	2.724E-33	8.457E-32	2.107E-30	1.559E-28	9.433E-27	6.765E-25	1.824E-23	1.918E-22
U-238+D	ΣDSR(j)		1.176E-15	1.172E-15	1.165E-15	1.138E-15	1.065E-15	8.441E-16	4.346E-16	4.257E-17
U-238+D	U-238+D	6.080E-18	1.693E-17	1.688E-17	1.676E-17	1.638E-17	1.533E-17	1.215E-17	6.255E-18	6.127E-19
U-238+D	U-234	6.080E-18	1.238E-24	3.703E-24	8.583E-24	2.516E-23	6.839E-23	1.786E-22	2.749E-22	8.964E-23
U-238+D	Th-230	6.080E-18	1.619E-29	1.130E-28	5.946E-28	5.237E-27	4.225E-26	3.938E-25	2.318E-24	7.389E-24
U-238+D	Ra-226+D4	6.080E-18	3.471E-33	5.309E-32	6.233E-31	1.636E-29	3.825E-28	1.162E-26	1.968E-25	1.698E-24
U-238+D	Pb-210+D2	6.080E-18	4.255E-35	1.320E-33	3.287E-32	2.432E-30	1.472E-28	1.055E-26	2.845E-25	2.991E-24
U-238+D	ΣDSR(j)		1.693E-17	1.688E-17	1.676E-17	1.638E-17	1.533E-17	1.215E-17	6.256E-18	6.128E-19

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	9.980E-01	1.864E-01	1.858E-01	1.846E-01	1.804E-01	1.688E-01	1.338E-01	6.888E-02	6.751E-03
U-238+D1	U-234	9.980E-01	2.032E-07	6.078E-07	1.409E-06	4.130E-06	1.123E-05	2.932E-05	4.512E-05	1.471E-05
U-238+D1	Th-230	9.980E-01	2.658E-12	1.855E-11	9.760E-11	8.595E-10	6.935E-09	6.464E-08	3.805E-07	1.213E-06
U-238+D1	Ra-226+D	9.980E-01	2.101E-15	3.163E-14	3.685E-13	9.629E-12	2.248E-10	6.828E-09	1.156E-07	9.961E-07
U-238+D1	Pb-210+D	9.980E-01	6.857E-18	2.065E-16	5.053E-15	3.699E-13	2.230E-11	1.597E-09	4.304E-08	4.525E-07
U-238+D1	Po-210	9.980E-01	2.481E-18	1.248E-16	4.594E-15	4.647E-13	3.182E-11	2.392E-09	6.533E-08	6.897E-07
U-238+D1	ΣDSR(j)		1.864E-01	1.858E-01	1.846E-01	1.804E-01	1.688E-01	1.338E-01	6.893E-02	6.769E-03
U-238+D1	U-238+D1	1.317E-06	2.461E-07	2.453E-07	2.437E-07	2.381E-07	2.228E-07	1.766E-07	9.092E-08	8.912E-09
U-238+D1	U-234	1.317E-06	2.682E-13	8.022E-13	1.860E-12	5.451E-12	1.482E-11	3.870E-11	5.956E-11	1.942E-11
U-238+D1	Th-230	1.317E-06	3.509E-18	2.449E-17	1.288E-16	1.135E-15	9.154E-15	8.533E-14	5.022E-13	1.601E-12
U-238+D1	Ra-226+D	1.317E-06	2.774E-21	4.176E-20	4.864E-19	1.271E-17	2.967E-16	9.012E-15	1.525E-13	1.315E-12
U-238+D1	Pb-210+D1	1.317E-06	8.495E-24	2.637E-22	6.570E-21	4.862E-19	2.942E-17	2.110E-15	5.688E-14	5.980E-13
U-238+D1	ΣDSR(j)		2.461E-07	2.453E-07	2.437E-07	2.381E-07	2.228E-07	1.766E-07	9.098E-08	8.935E-09
U-238+D1	U-238+D1	1.896E-08	3.542E-09	3.531E-09	3.507E-09	3.427E-09	3.207E-09	2.542E-09	1.309E-09	1.283E-10
U-238+D1	U-234	1.896E-08	3.861E-15	1.155E-14	2.677E-14	7.846E-14	2.133E-13	5.570E-13	8.573E-13	2.796E-13
U-238+D1	Th-230	1.896E-08	5.050E-20	3.525E-19	1.854E-18	1.633E-17	1.318E-16	1.228E-15	7.229E-15	2.304E-14
U-238+D1	Ra-226+D	1.896E-08	3.992E-23	6.011E-22	7.001E-21	1.829E-19	4.271E-18	1.297E-16	2.196E-15	1.893E-14
U-238+D1	Pb-210+D2	1.896E-08	1.327E-25	4.117E-24	1.025E-22	7.584E-21	4.589E-19	3.291E-17	8.872E-16	9.328E-15
U-238+D1	ΣDSR(j)		3.542E-09	3.531E-09	3.507E-09	3.427E-09	3.207E-09	2.542E-09	1.310E-09	1.286E-10
U-238+D1	U-238+D1	2.096E-04	3.916E-05	3.903E-05	3.877E-05	3.788E-05	3.545E-05	2.810E-05	1.447E-05	1.418E-06
U-238+D1	U-234	2.096E-04	4.268E-11	1.277E-10	2.959E-10	8.674E-10	2.358E-09	6.158E-09	9.477E-09	3.091E-09
U-238+D1	Th-230	2.096E-04	5.583E-16	3.897E-15	2.050E-14	1.805E-13	1.457E-12	1.358E-11	7.991E-11	2.548E-10
U-238+D1	Ra-226+D1	2.096E-04	9.587E-19	1.439E-17	1.674E-16	4.370E-15	1.020E-13	3.097E-12	5.242E-11	4.517E-10
U-238+D1	Pb-210+D	2.096E-04	1.440E-21	4.337E-20	1.061E-18	7.770E-17	4.684E-15	3.355E-13	9.040E-12	9.504E-11
U-238+D1	Po-210	2.096E-04	5.212E-22	2.621E-20	9.649E-19	9.760E-17	6.683E-15	5.024E-13	1.372E-11	1.449E-10
U-238+D1	ΣDSR(j)		3.916E-05	3.903E-05	3.877E-05	3.788E-05	3.545E-05	2.811E-05	1.448E-05	1.422E-06
U-238+D1	U-238+D1	2.767E-10	5.169E-11	5.152E-11	5.118E-11	5.000E-11	4.679E-11	3.709E-11	1.910E-11	1.872E-12
U-238+D1	U-234	2.767E-10	5.633E-17	1.685E-16	3.906E-16	1.145E-15	3.112E-15	8.128E-15	1.251E-14	4.080E-15
U-238+D1	Th-230	2.767E-10	7.370E-22	5.144E-21	2.706E-20	2.383E-19	1.923E-18	1.792E-17	1.055E-16	3.363E-16
U-238+D1	Ra-226+D1	2.767E-10	1.265E-24	1.900E-23	2.209E-22	5.768E-21	1.346E-19	4.088E-18	6.920E-17	5.963E-16
U-238+D1	Pb-210+D1	2.767E-10	1.784E-27	5.540E-26	1.380E-24	1.021E-22	6.179E-21	4.432E-19	1.195E-17	1.256E-16
U-238+D1	ΣDSR(j)		5.169E-11	5.152E-11	5.118E-11	5.001E-11	4.680E-11	3.710E-11	1.911E-11	1.877E-12
U-238+D1	U-238+D1	3.983E-12	7.440E-13	7.416E-13	7.367E-13	7.198E-13	6.735E-13	5.339E-13	2.749E-13	2.694E-14
U-238+D1	U-234	3.983E-12	8.109E-19	2.425E-18	5.623E-18	1.648E-17	4.480E-17	1.170E-16	1.801E-16	5.872E-17
U-238+D1	Th-230	3.983E-12	1.061E-23	7.404E-23	3.895E-22	3.430E-21	2.767E-20	2.580E-19	1.518E-18	4.840E-18
U-238+D1	Ra-226+D1	3.983E-12	1.822E-26	2.734E-25	3.180E-24	8.302E-23	1.938E-21	5.885E-20	9.960E-19	8.583E-18
U-238+D1	Pb-210+D2	3.983E-12	2.787E-29	8.647E-28	2.153E-26	1.593E-24	9.639E-23	6.913E-21	1.863E-19	1.959E-18
U-238+D1	ΣDSR(j)		7.440E-13	7.416E-13	7.367E-13	7.198E-13	6.736E-13	5.340E-13	2.751E-13	2.702E-14

Summary : Residential Default

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.994E-04	3.726E-05	3.713E-05	3.689E-05	3.604E-05	3.373E-05	2.673E-05	1.376E-05	1.349E-06
U-238+D1	U-234	1.994E-04	4.060E-11	1.215E-10	2.815E-10	8.253E-10	2.243E-09	5.859E-09	9.017E-09	2.941E-09
U-238+D1	Th-230	1.994E-04	5.312E-16	3.708E-15	1.950E-14	1.718E-13	1.386E-12	1.292E-11	7.603E-11	2.424E-10
U-238+D1	Ra-226+D2	1.994E-04	3.824E-19	5.762E-18	6.713E-17	1.755E-15	4.097E-14	1.244E-12	2.106E-11	1.815E-10
U-238+D1	Pb-210+D	1.994E-04	1.370E-21	4.126E-20	1.010E-18	7.392E-17	4.457E-15	3.192E-13	8.601E-12	9.043E-11
U-238+D1	Po-210	1.994E-04	4.959E-22	2.494E-20	9.180E-19	9.286E-17	6.358E-15	4.780E-13	1.306E-11	1.378E-10
U-238+D1	ΣDSR(j)		3.726E-05	3.713E-05	3.689E-05	3.604E-05	3.373E-05	2.674E-05	1.377E-05	1.353E-06
U-238+D1	U-238+D1	2.633E-10	4.918E-11	4.902E-11	4.869E-11	4.757E-11	4.452E-11	3.529E-11	1.817E-11	1.781E-12
U-238+D1	U-234	2.633E-10	5.360E-17	1.603E-16	3.716E-16	1.089E-15	2.961E-15	7.733E-15	1.190E-14	3.881E-15
U-238+D1	Th-230	2.633E-10	7.012E-22	4.894E-21	2.575E-20	2.267E-19	1.829E-18	1.705E-17	1.004E-16	3.199E-16
U-238+D1	Ra-226+D2	2.633E-10	5.048E-25	7.605E-24	8.862E-23	2.316E-21	5.408E-20	1.642E-18	2.780E-17	2.396E-16
U-238+D1	Pb-210+D1	2.633E-10	1.698E-27	5.271E-26	1.313E-24	9.715E-23	5.879E-21	4.216E-19	1.137E-17	1.195E-16
U-238+D1	ΣDSR(j)		4.918E-11	4.902E-11	4.869E-11	4.758E-11	4.452E-11	3.530E-11	1.818E-11	1.786E-12
U-238+D1	U-238+D1	3.789E-12	7.079E-13	7.056E-13	7.009E-13	6.848E-13	6.408E-13	5.080E-13	2.615E-13	2.563E-14
U-238+D1	U-234	3.789E-12	7.715E-19	2.308E-18	5.349E-18	1.568E-17	4.262E-17	1.113E-16	1.713E-16	5.587E-17
U-238+D1	Th-230	3.789E-12	1.009E-23	7.044E-23	3.706E-22	3.264E-21	2.633E-20	2.454E-19	1.445E-18	4.605E-18
U-238+D1	Ra-226+D2	3.789E-12	7.265E-27	1.095E-25	1.276E-24	3.334E-23	7.784E-22	2.364E-20	4.002E-19	3.449E-18
U-238+D1	Pb-210+D2	3.789E-12	2.652E-29	8.227E-28	2.049E-26	1.516E-24	9.171E-23	6.577E-21	1.773E-19	1.864E-18
U-238+D1	ΣDSR(j)		7.079E-13	7.056E-13	7.009E-13	6.848E-13	6.409E-13	5.081E-13	2.617E-13	2.570E-14
U-238+D1	U-238+D1	4.189E-08	7.826E-09	7.800E-09	7.748E-09	7.570E-09	7.084E-09	5.615E-09	2.891E-09	2.834E-10
U-238+D1	U-234	4.189E-08	8.529E-15	2.551E-14	5.914E-14	1.733E-13	4.712E-13	1.231E-12	1.894E-12	6.176E-13
U-238+D1	Th-230	4.189E-08	1.116E-19	7.788E-19	4.097E-18	3.608E-17	2.911E-16	2.713E-15	1.597E-14	5.091E-14
U-238+D1	Ra-226+D3	4.189E-08	1.837E-22	2.758E-21	3.208E-20	8.376E-19	1.955E-17	5.937E-16	1.005E-14	8.659E-14
U-238+D1	Pb-210+D	4.189E-08	2.878E-25	8.666E-24	2.121E-22	1.553E-20	9.361E-19	6.704E-17	1.807E-15	1.899E-14
U-238+D1	Po-210	4.189E-08	1.042E-25	5.238E-24	1.928E-22	1.950E-20	1.336E-18	1.004E-16	2.742E-15	2.895E-14
U-238+D1	ΣDSR(j)		7.826E-09	7.800E-09	7.748E-09	7.570E-09	7.085E-09	5.617E-09	2.893E-09	2.842E-10
U-238+D1	U-238+D1	5.530E-14	1.033E-14	1.030E-14	1.023E-14	9.993E-15	9.351E-15	7.412E-15	3.816E-15	3.741E-16
U-238+D1	U-234	5.530E-14	1.126E-20	3.367E-20	7.806E-20	2.288E-19	6.220E-19	1.624E-18	2.500E-18	8.153E-19
U-238+D1	Th-230	5.530E-14	1.473E-25	1.028E-24	5.408E-24	4.762E-23	3.842E-22	3.582E-21	2.108E-20	6.720E-20
U-238+D1	Ra-226+D3	5.530E-14	2.425E-28	3.641E-27	4.235E-26	1.106E-24	2.581E-23	7.837E-22	1.326E-20	1.143E-19
U-238+D1	Pb-210+D1	5.530E-14	3.566E-31	1.107E-29	2.758E-28	2.041E-26	1.235E-24	8.856E-23	2.387E-21	2.510E-20
U-238+D1	ΣDSR(j)		1.033E-14	1.030E-14	1.023E-14	9.993E-15	9.352E-15	7.414E-15	3.819E-15	3.751E-16
U-238+D1	U-238+D1	7.959E-16	1.487E-16	1.482E-16	1.472E-16	1.438E-16	1.346E-16	1.067E-16	5.493E-17	5.384E-18
U-238+D1	U-234	7.959E-16	1.620E-22	4.847E-22	1.124E-21	3.294E-21	8.952E-21	2.338E-20	3.599E-20	1.174E-20
U-238+D1	Th-230	7.959E-16	2.120E-27	1.480E-26	7.784E-26	6.855E-25	5.531E-24	5.155E-23	3.034E-22	9.673E-22
U-238+D1	Ra-226+D3	7.959E-16	3.491E-30	5.241E-29	6.095E-28	1.591E-26	3.715E-25	1.128E-23	1.909E-22	1.645E-21
U-238+D1	Pb-210+D2	7.959E-16	5.570E-33	1.728E-31	4.303E-30	3.184E-28	1.926E-26	1.382E-24	3.724E-23	3.916E-22
U-238+D1	ΣDSR(j)		1.487E-16	1.482E-16	1.472E-16	1.438E-16	1.346E-16	1.067E-16	5.497E-17	5.399E-18

Summary : Residential Default

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.997E-07	3.730E-08	3.718E-08	3.693E-08	3.609E-08	3.377E-08	2.677E-08	1.378E-08	1.351E-09
U-238+D1	U-234	1.997E-07	4.065E-14	1.216E-13	2.819E-13	8.263E-13	2.246E-12	5.866E-12	9.028E-12	2.944E-12
U-238+D1	Th-230	1.997E-07	5.318E-19	3.712E-18	1.953E-17	1.720E-16	1.387E-15	1.293E-14	7.612E-14	2.427E-13
U-238+D1	Ra-226+D4	1.997E-07	1.140E-22	1.744E-21	2.047E-20	5.373E-19	1.256E-17	3.818E-16	6.463E-15	5.577E-14
U-238+D1	Pb-210+D	1.997E-07	1.372E-24	4.131E-23	1.011E-21	7.401E-20	4.462E-18	3.196E-16	8.611E-15	9.054E-14
U-238+D1	Po-210	1.997E-07	4.965E-25	2.497E-23	9.192E-22	9.297E-20	6.366E-18	4.786E-16	1.307E-14	1.380E-13
U-238+D1	ΣDSR(j)		3.730E-08	3.718E-08	3.693E-08	3.609E-08	3.377E-08	2.677E-08	1.379E-08	1.354E-09
U-238+D1	U-238+D1	2.636E-13	4.924E-14	4.908E-14	4.875E-14	4.763E-14	4.457E-14	3.533E-14	1.819E-14	1.783E-15
U-238+D1	U-234	2.636E-13	5.366E-20	1.605E-19	3.721E-19	1.091E-18	2.965E-18	7.743E-18	1.192E-17	3.886E-18
U-238+D1	Th-230	2.636E-13	7.020E-25	4.900E-24	2.578E-23	2.270E-22	1.831E-21	1.707E-20	1.005E-19	3.203E-19
U-238+D1	Ra-226+D4	2.636E-13	1.505E-28	2.302E-27	2.702E-26	7.092E-25	1.658E-23	5.039E-22	8.531E-21	7.361E-20
U-238+D1	Pb-210+D1	2.636E-13	1.700E-30	5.277E-29	1.314E-27	9.727E-26	5.886E-24	4.222E-22	1.138E-20	1.197E-19
U-238+D1	ΣDSR(j)		4.924E-14	4.908E-14	4.875E-14	4.763E-14	4.458E-14	3.534E-14	1.820E-14	1.788E-15
U-238+D1	U-238+D1	3.794E-15	7.088E-16	7.064E-16	7.017E-16	6.856E-16	6.416E-16	5.086E-16	2.619E-16	2.567E-17
U-238+D1	U-234	3.794E-15	7.724E-22	2.310E-21	5.356E-21	1.570E-20	4.267E-20	1.115E-19	1.715E-19	5.594E-20
U-238+D1	Th-230	3.794E-15	1.011E-26	7.053E-26	3.710E-25	3.268E-24	2.636E-23	2.457E-22	1.446E-21	4.611E-21
U-238+D1	Ra-226+D4	3.794E-15	2.166E-30	3.313E-29	3.890E-28	1.021E-26	2.387E-25	7.253E-24	1.228E-22	1.060E-21
U-238+D1	Pb-210+D2	3.794E-15	2.655E-32	8.237E-31	2.051E-29	1.517E-27	9.182E-26	6.585E-24	1.775E-22	1.866E-21
U-238+D1	ΣDSR(j)		7.088E-16	7.064E-16	7.017E-16	6.856E-16	6.416E-16	5.087E-16	2.620E-16	2.573E-17

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Radionuclide (i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	2.946E+00	2.295E+00	2.342E+00	2.944E+00	5.683E+00	5.680E+01	4.081E+04	*7.632E+13	
Po-210	7.632E+00	4.833E+01	1.939E+03	7.929E+08	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15	
Ra-226	2.607E+00	2.531E+00	2.380E+00	2.022E+00	1.617E+00	1.563E+00	2.664E+00	1.899E+01	
Th-230	1.947E+01	1.940E+01	1.927E+01	1.877E+01	1.719E+01	1.282E+01	8.255E+00	5.894E+00	
U-234	8.316E+01	8.343E+01	8.398E+01	8.593E+01	9.175E+01	1.152E+02	2.172E+02	1.174E+03	
U-238	6.284E+01	6.305E+01	6.347E+01	6.496E+01	6.941E+01	8.755E+01	1.700E+02	1.731E+03	

*At specific activity limit

Summary : Residential Default

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Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Pb-210	1.000E+00	1.520 ± 0.003	5.291E+00	2.268E+00	4.073E+00	2.946E+00
Po-210	1.000E+00	0.000E+00	1.572E+00	7.632E+00	1.572E+00	7.632E+00
Ra-226	1.000E+00	62.7 ± 0.1	8.020E+00	1.496E+00	4.604E+00	2.607E+00
Th-230	1.000E+00	1.000E+03	2.036E+00	5.894E+00	6.164E-01	1.947E+01
U-234	1.000E+00	0.000E+00	1.443E-01	8.316E+01	1.443E-01	8.316E+01
U-238	1.000E+00	0.000E+00	1.910E-01	6.284E+01	1.910E-01	6.284E+01

Summary : Residential Default

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	2.218E+00	2.146E+00	2.010E+00	1.596E+00	8.270E-01	8.275E-02	1.152E-04	1.158E-14
Pb-210	Pb-210	1.320E-06	2.933E-06	2.838E-06	2.657E-06	2.111E-06	1.094E-06	1.094E-07	1.523E-10	1.532E-20
Pb-210	Ra-226	9.996E-01	3.546E-02	1.035E-01	2.322E-01	6.159E-01	1.290E+00	1.679E+00	1.007E+00	1.412E-01
Pb-210	Ra-226	2.100E-04	7.448E-06	2.173E-05	4.877E-05	1.294E-04	2.710E-04	3.527E-04	2.114E-04	2.966E-05
Pb-210	Ra-226	1.998E-04	7.086E-06	2.068E-05	4.640E-05	1.231E-04	2.578E-04	3.356E-04	2.012E-04	2.822E-05
Pb-210	Ra-226	4.196E-08	1.488E-09	4.343E-09	9.746E-09	2.585E-08	5.416E-08	7.048E-08	4.226E-08	5.927E-09
Pb-210	Ra-226	2.000E-07	7.094E-09	2.070E-08	4.646E-08	1.232E-07	2.581E-07	3.360E-07	2.014E-07	2.825E-08
Pb-210	Th-230	9.996E-01	5.194E-06	3.540E-05	1.815E-04	1.492E-03	1.012E-02	5.906E-02	1.747E-01	3.061E-01
Pb-210	Th-230	2.100E-04	1.091E-09	7.436E-09	3.812E-08	3.134E-07	2.126E-06	1.241E-05	3.669E-05	6.429E-05
Pb-210	Th-230	1.998E-04	1.038E-09	7.075E-09	3.627E-08	2.982E-07	2.022E-06	1.180E-05	3.491E-05	6.117E-05
Pb-210	Th-230	4.196E-08	2.180E-13	1.486E-12	7.618E-12	6.263E-11	4.248E-10	2.479E-09	7.332E-09	1.285E-08
Pb-210	Th-230	2.000E-07	1.039E-12	7.084E-12	3.631E-11	2.985E-10	2.025E-09	1.182E-08	3.495E-08	6.124E-08
Pb-210	U-234	9.996E-01	1.206E-11	1.759E-10	1.994E-09	4.919E-08	1.002E-06	2.074E-05	1.830E-04	7.211E-04
Pb-210	U-234	2.100E-04	2.533E-15	3.696E-14	4.188E-13	1.033E-11	2.104E-10	4.356E-09	3.844E-08	1.515E-07
Pb-210	U-234	1.998E-04	2.410E-15	3.516E-14	3.984E-13	9.829E-12	2.002E-10	4.144E-09	3.657E-08	1.441E-07
Pb-210	U-234	4.196E-08	5.062E-19	7.385E-18	8.369E-17	2.065E-15	4.205E-14	8.705E-13	7.681E-12	3.027E-11
Pb-210	U-234	2.000E-07	2.413E-18	3.520E-17	3.989E-16	9.841E-15	2.004E-13	4.149E-12	3.661E-11	1.443E-10
Pb-210	U-238	1.599E-03	1.099E-20	3.309E-19	8.097E-18	5.928E-16	3.574E-14	2.560E-12	6.897E-11	7.251E-10
Pb-210	U-238	3.359E-07	2.308E-24	6.950E-23	1.701E-21	1.245E-19	7.507E-18	5.376E-16	1.449E-14	1.523E-13
Pb-210	U-238	3.196E-07	2.196E-24	6.612E-23	1.618E-21	1.185E-19	7.142E-18	5.115E-16	1.378E-14	1.449E-13
Pb-210	U-238	6.713E-11	4.607E-28	1.389E-26	3.399E-25	2.488E-23	1.500E-21	1.074E-19	2.895E-18	3.044E-17
Pb-210	U-238	3.200E-10	2.198E-27	6.620E-26	1.620E-24	1.186E-22	7.151E-21	5.121E-19	1.380E-17	1.451E-16
Pb-210	U-238	9.980E-01	6.857E-18	2.065E-16	5.053E-15	3.699E-13	2.230E-11	1.597E-09	4.304E-08	4.525E-07
Pb-210	U-238	2.096E-04	1.440E-21	4.337E-20	1.061E-18	7.770E-17	4.684E-15	3.355E-13	9.040E-12	9.504E-11
Pb-210	U-238	1.994E-04	1.370E-21	4.126E-20	1.010E-18	7.392E-17	4.457E-15	3.192E-13	8.601E-12	9.043E-11
Pb-210	U-238	4.189E-08	2.878E-25	8.666E-24	2.121E-22	1.553E-20	9.361E-19	6.704E-17	1.807E-15	1.899E-14
Pb-210	U-238	1.997E-07	1.372E-24	4.131E-23	1.011E-21	7.401E-20	4.462E-18	3.196E-16	8.611E-15	9.054E-14
Pb-210	ΣDOSE(j)		2.253E+00	2.250E+00	2.242E+00	2.214E+00	2.128E+00	1.822E+00	1.182E+00	4.482E-01
Po-210	Pb-210	1.000E+00	1.855E+00	3.083E+00	3.115E+00	2.479E+00	1.284E+00	1.285E-01	1.789E-04	1.799E-14
Po-210	Po-210	1.000E+00	1.572E+00	2.483E-01	6.190E-03	1.513E-08	1.401E-24	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	2.208E-02	1.051E-01	3.012E-01	8.982E-01	1.949E+00	2.563E+00	1.538E+00	2.157E-01
Po-210	Ra-226	2.100E-04	4.637E-06	2.208E-05	6.327E-05	1.887E-04	4.093E-04	5.383E-04	3.230E-04	4.531E-05
Po-210	Ra-226	1.998E-04	4.412E-06	2.100E-05	6.019E-05	1.795E-04	3.894E-04	5.121E-04	3.073E-04	4.311E-05
Po-210	Ra-226	4.196E-08	9.267E-10	4.411E-09	1.264E-08	3.770E-08	8.180E-08	1.076E-07	6.455E-08	9.055E-09
Po-210	Ra-226	2.000E-07	4.417E-09	2.103E-08	6.027E-08	1.797E-07	3.899E-07	5.128E-07	3.077E-07	4.316E-08
Po-210	Th-230	9.996E-01	2.599E-06	2.886E-05	2.050E-04	2.062E-03	1.497E-02	8.947E-02	2.660E-01	4.668E-01
Po-210	Th-230	2.100E-04	5.458E-10	6.061E-09	4.306E-08	4.331E-07	3.144E-06	1.879E-05	5.588E-05	9.805E-05
Po-210	Th-230	1.998E-04	5.193E-10	5.767E-09	4.097E-08	4.120E-07	2.992E-06	1.788E-05	5.316E-05	9.328E-05
Po-210	Th-230	4.196E-08	1.091E-13	1.211E-12	8.605E-12	8.654E-11	6.284E-10	3.756E-09	1.117E-08	1.959E-08
Po-210	Th-230	2.000E-07	5.199E-13	5.774E-12	4.102E-11	4.125E-10	2.995E-09	1.790E-08	5.323E-08	9.340E-08
Po-210	U-234	9.996E-01	5.060E-12	1.216E-10	2.005E-09	6.471E-08	1.455E-06	3.123E-05	2.782E-04	1.099E-03
Po-210	U-234	2.100E-04	1.063E-15	2.554E-14	4.212E-13	1.359E-11	3.056E-10	6.561E-09	5.844E-08	2.309E-07
Po-210	U-234	1.998E-04	1.011E-15	2.430E-14	4.007E-13	1.293E-11	2.907E-10	6.242E-09	5.560E-08	2.197E-07
Po-210	U-234	4.196E-08	2.124E-19	5.104E-18	8.417E-17	2.716E-15	6.107E-14	1.311E-12	1.168E-11	4.615E-11
Po-210	U-234	2.000E-07	1.012E-18	2.433E-17	4.012E-16	1.295E-14	2.911E-13	6.249E-12	5.567E-11	2.200E-10
Po-210	U-238	1.599E-03	3.976E-21	2.000E-19	7.362E-18	7.446E-16	5.099E-14	3.833E-12	1.047E-10	1.105E-09
Po-210	U-238	3.359E-07	8.352E-25	4.201E-23	1.546E-21	1.564E-19	1.071E-17	8.051E-16	2.199E-14	2.322E-13
Po-210	U-238	3.196E-07	7.946E-25	3.997E-23	1.471E-21	1.488E-19	1.019E-17	7.660E-16	2.092E-14	2.209E-13

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	1.669E-28	8.394E-27	3.090E-25	3.126E-23	2.140E-21	1.609E-19	4.394E-18	4.639E-17
Po-210	U-238	3.200E-10	7.955E-28	4.001E-26	1.473E-24	1.490E-22	1.020E-20	7.670E-19	2.095E-17	2.211E-16
Po-210	U-238	9.980E-01	2.481E-18	1.248E-16	4.594E-15	4.647E-13	3.182E-11	2.392E-09	6.533E-08	6.897E-07
Po-210	U-238	2.096E-04	5.212E-22	2.621E-20	9.649E-19	9.760E-17	6.683E-15	5.024E-13	1.372E-11	1.449E-10
Po-210	U-238	1.994E-04	4.959E-22	2.494E-20	9.180E-19	9.286E-17	6.358E-15	4.780E-13	1.306E-11	1.378E-10
Po-210	U-238	4.189E-08	1.042E-25	5.238E-24	1.928E-22	1.950E-20	1.336E-18	1.004E-16	2.742E-15	2.895E-14
Po-210	U-238	1.997E-07	4.965E-25	2.497E-23	9.192E-22	9.297E-20	6.366E-18	4.786E-16	1.307E-14	1.380E-13
Po-210	ΣDOSE(j)		3.449E+00	3.436E+00	3.423E+00	3.380E+00	3.249E+00	2.782E+00	1.805E+00	6.839E-01
Pb-210	Pb-210	1.900E-08	4.575E-08	4.427E-08	4.145E-08	3.293E-08	1.706E-08	1.707E-09	2.375E-12	2.389E-22
Pb-210	Ra-226	1.899E-08	7.302E-10	2.133E-09	4.788E-09	1.270E-08	2.661E-08	3.464E-08	2.076E-08	2.913E-09
Pb-210	Ra-226	3.989E-12	1.534E-13	4.480E-13	1.006E-12	2.668E-12	5.589E-12	7.275E-12	4.361E-12	6.118E-13
Pb-210	Ra-226	3.795E-12	1.459E-13	4.263E-13	9.568E-13	2.538E-12	5.318E-12	6.921E-12	4.150E-12	5.820E-13
Pb-210	Ra-226	7.972E-16	3.065E-17	8.954E-17	2.010E-16	5.332E-16	1.117E-15	1.454E-15	8.716E-16	1.223E-16
Pb-210	Ra-226	3.800E-15	1.461E-16	4.268E-16	9.580E-16	2.541E-15	5.324E-15	6.930E-15	4.155E-15	5.827E-16
Pb-210	Th-230	1.899E-08	1.028E-13	7.165E-13	3.711E-12	3.068E-11	2.085E-10	1.217E-09	3.601E-09	6.311E-09
Pb-210	Th-230	3.989E-12	2.160E-17	1.505E-16	7.795E-16	6.444E-15	4.379E-14	2.557E-13	7.563E-13	1.326E-12
Pb-210	Th-230	3.795E-12	2.055E-17	1.432E-16	7.416E-16	6.131E-15	4.166E-14	2.433E-13	7.196E-13	1.261E-12
Pb-210	Th-230	7.972E-16	4.317E-21	3.008E-20	1.558E-19	1.288E-18	8.750E-18	5.110E-17	1.511E-16	2.649E-16
Pb-210	Th-230	3.800E-15	2.058E-20	1.434E-19	7.425E-19	6.138E-18	4.171E-17	2.436E-16	7.205E-16	1.263E-15
Pb-210	U-234	1.899E-08	2.359E-19	3.533E-18	4.060E-17	1.010E-15	2.063E-14	4.274E-13	3.772E-12	1.487E-11
Pb-210	U-234	3.989E-12	4.955E-23	7.421E-22	8.529E-21	2.121E-19	4.332E-18	8.978E-17	7.923E-16	3.123E-15
Pb-210	U-234	3.795E-12	4.714E-23	7.061E-22	8.114E-21	2.018E-19	4.122E-18	8.541E-17	7.539E-16	2.971E-15
Pb-210	U-234	7.972E-16	9.902E-27	1.483E-25	1.704E-24	4.239E-23	8.657E-22	1.794E-20	1.583E-19	6.240E-19
Pb-210	U-234	3.800E-15	4.720E-26	7.069E-25	8.124E-24	2.021E-22	4.127E-21	8.552E-20	7.548E-19	2.974E-18
Pb-210	U-238	3.039E-11	2.126E-28	6.597E-27	1.643E-25	1.215E-23	7.355E-22	5.274E-20	1.422E-18	1.495E-17
Pb-210	U-238	6.383E-15	0.000E+00	1.116E-30	3.450E-29	2.553E-27	1.545E-25	1.108E-23	2.986E-22	3.140E-21
Pb-210	U-238	6.073E-15	0.000E+00	1.062E-30	3.283E-29	2.429E-27	1.470E-25	1.054E-23	2.841E-22	2.987E-21
Pb-210	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.087E-29	2.214E-27	5.968E-26	6.275E-25
Pb-210	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	1.946E-30	1.471E-28	1.055E-26	2.845E-25	2.991E-24
Pb-210	U-238	1.896E-08	1.327E-25	4.117E-24	1.025E-22	7.584E-21	4.589E-19	3.291E-17	8.872E-16	9.328E-15
Pb-210	U-238	3.983E-12	2.787E-29	8.646E-28	2.153E-26	1.593E-24	9.639E-23	6.913E-21	1.863E-19	1.959E-18
Pb-210	U-238	3.789E-12	2.651E-29	8.226E-28	2.049E-26	1.516E-24	9.171E-23	6.577E-21	1.773E-19	1.864E-18
Pb-210	U-238	7.959E-16	0.000E+00	0.000E+00	3.451E-30	3.183E-28	1.926E-26	1.382E-24	3.724E-23	3.916E-22
Pb-210	U-238	3.794E-15	0.000E+00	0.000E+00	2.051E-29	1.517E-27	9.182E-26	6.585E-24	1.775E-22	1.866E-21
Pb-210	ΣDOSE(j)		4.648E-08	4.641E-08	4.625E-08	4.567E-08	4.389E-08	3.757E-08	2.438E-08	9.242E-09
Ra-226	Ra-226	9.996E-01	4.543E+00	4.531E+00	4.505E+00	4.418E+00	4.176E+00	3.431E+00	1.957E+00	2.745E-01
Ra-226	Ra-226	1.319E-06	5.997E-06	5.980E-06	5.947E-06	5.831E-06	5.513E-06	4.529E-06	2.584E-06	3.624E-07
Ra-226	Th-230	9.996E-01	9.796E-04	2.944E-03	6.858E-03	2.039E-02	5.760E-02	1.725E-01	3.993E-01	6.543E-01
Ra-226	Th-230	1.319E-06	1.293E-09	3.886E-09	9.053E-09	2.691E-08	7.603E-08	2.277E-07	5.270E-07	8.636E-07
Ra-226	Th-230	1.899E-08	1.861E-11	5.594E-11	1.303E-10	3.873E-10	1.094E-09	3.277E-09	7.586E-09	1.243E-08
Ra-226	U-234	9.996E-01	2.991E-09	2.100E-08	1.108E-07	9.780E-07	7.921E-06	7.471E-05	4.534E-04	1.560E-03
Ra-226	U-234	1.319E-06	3.948E-15	2.771E-14	1.462E-13	1.291E-12	1.046E-11	9.861E-11	5.985E-10	2.059E-09
Ra-226	U-234	1.899E-08	5.682E-17	3.989E-16	2.105E-15	1.858E-14	1.505E-13	1.419E-12	8.615E-12	2.963E-11
Ra-226	U-238	1.599E-03	3.367E-18	5.070E-17	5.905E-16	1.543E-14	3.603E-13	1.094E-11	1.852E-10	1.596E-09
Ra-226	U-238	2.111E-09	4.445E-24	6.692E-23	7.795E-22	2.037E-20	4.756E-19	1.444E-17	2.445E-16	2.107E-15
Ra-226	U-238	3.039E-11	6.398E-26	9.632E-25	1.122E-23	2.932E-22	6.845E-21	2.079E-19	3.519E-18	3.033E-17
Ra-226	U-238	9.980E-01	2.101E-15	3.163E-14	3.685E-13	9.629E-12	2.248E-10	6.828E-09	1.156E-07	9.961E-07

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	2.774E-21	4.176E-20	4.864E-19	1.271E-17	2.967E-16	9.012E-15	1.525E-13	1.315E-12
Ra-226	U-238	1.896E-08	3.992E-23	6.011E-22	7.001E-21	1.829E-19	4.271E-18	1.297E-16	2.196E-15	1.893E-14
Ra-226	ΣDOSE(j)		4.544E+00	4.534E+00	4.512E+00	4.438E+00	4.234E+00	3.604E+00	2.357E+00	9.304E-01
Pb-210	Ra-226	1.319E-06	4.689E-08	1.368E-07	3.070E-07	8.144E-07	1.706E-06	2.220E-06	1.331E-06	1.867E-07
Pb-210	Ra-226	2.771E-10	9.848E-12	2.874E-11	6.449E-11	1.711E-10	3.583E-10	4.664E-10	2.796E-10	3.922E-11
Pb-210	Ra-226	2.637E-10	9.370E-12	2.734E-11	6.136E-11	1.627E-10	3.409E-10	4.437E-10	2.660E-10	3.732E-11
Pb-210	Ra-226	5.538E-14	1.968E-15	5.744E-15	1.289E-14	3.418E-14	7.161E-14	9.320E-14	5.588E-14	7.838E-15
Pb-210	Ra-226	2.640E-13	9.381E-15	2.738E-14	6.143E-14	1.629E-13	3.414E-13	4.443E-13	2.663E-13	3.736E-14
Pb-210	Th-230	1.319E-06	6.587E-12	4.592E-11	2.379E-10	1.967E-09	1.336E-08	7.805E-08	2.308E-07	4.046E-07
Pb-210	Th-230	2.771E-10	1.384E-15	9.644E-15	4.996E-14	4.131E-13	2.807E-12	1.639E-11	4.849E-11	8.498E-11
Pb-210	Th-230	2.637E-10	1.316E-15	9.176E-15	4.753E-14	3.930E-13	2.671E-12	1.560E-11	4.613E-11	8.085E-11
Pb-210	Th-230	5.538E-14	2.765E-19	1.927E-18	9.984E-18	8.255E-17	5.609E-16	3.276E-15	9.690E-15	1.698E-14
Pb-210	Th-230	2.640E-13	1.318E-18	9.187E-18	4.759E-17	3.935E-16	2.674E-15	1.562E-14	4.619E-14	8.094E-14
Pb-210	U-234	1.319E-06	1.511E-17	2.264E-16	2.602E-15	6.474E-14	1.322E-12	2.740E-11	2.418E-10	9.530E-10
Pb-210	U-234	2.771E-10	3.173E-21	4.755E-20	5.466E-19	1.360E-17	2.777E-16	5.755E-15	5.080E-14	2.002E-13
Pb-210	U-234	2.637E-10	3.019E-21	4.524E-20	5.201E-19	1.294E-17	2.642E-16	5.476E-15	4.833E-14	1.905E-13
Pb-210	U-234	5.538E-14	6.341E-25	9.502E-24	1.092E-22	2.717E-21	5.550E-20	1.150E-18	1.015E-17	4.000E-17
Pb-210	U-234	2.640E-13	3.022E-24	4.530E-23	5.207E-22	1.295E-20	2.645E-19	5.482E-18	4.839E-17	1.907E-16
Pb-210	U-238	2.111E-09	1.361E-26	4.227E-25	1.053E-23	7.791E-22	4.715E-20	3.381E-18	9.115E-17	9.584E-16
Pb-210	U-238	4.434E-13	2.525E-30	8.851E-29	2.211E-27	1.636E-25	9.903E-24	7.102E-22	1.914E-20	2.013E-19
Pb-210	U-238	4.219E-13	2.402E-30	8.421E-29	2.104E-27	1.557E-25	9.422E-24	6.757E-22	1.821E-20	1.915E-19
Pb-210	U-238	8.862E-17	0.000E+00	0.000E+00	0.000E+00	3.260E-29	1.979E-27	1.419E-25	3.826E-24	4.023E-23
Pb-210	U-238	4.224E-16	0.000E+00	0.000E+00	1.835E-30	1.554E-28	9.433E-27	6.765E-25	1.824E-23	1.918E-22
Pb-210	U-238	1.317E-06	8.495E-24	2.637E-22	6.570E-21	4.862E-19	2.942E-17	2.110E-15	5.688E-14	5.980E-13
Pb-210	U-238	2.767E-10	1.784E-27	5.540E-26	1.380E-24	1.021E-22	6.179E-21	4.432E-19	1.195E-17	1.256E-16
Pb-210	U-238	2.633E-10	1.697E-27	5.271E-26	1.313E-24	9.715E-23	5.879E-21	4.216E-19	1.137E-17	1.195E-16
Pb-210	U-238	5.530E-14	0.000E+00	1.104E-29	2.749E-28	2.041E-26	1.235E-24	8.856E-23	2.387E-21	2.510E-20
Pb-210	U-238	2.636E-13	1.501E-30	5.261E-29	1.314E-27	9.727E-26	5.886E-24	4.222E-22	1.138E-20	1.197E-19
Pb-210	ΣDOSE(j)		4.691E-08	1.369E-07	3.074E-07	8.167E-07	1.720E-06	2.299E-06	1.563E-06	5.925E-07
Ra-226	Ra-226	1.899E-08	8.632E-08	8.608E-08	8.560E-08	8.393E-08	7.935E-08	6.520E-08	3.719E-08	5.216E-09
Ra-226	Ra-226	2.100E-04	2.061E-03	2.055E-03	2.044E-03	2.004E-03	1.894E-03	1.557E-03	8.879E-04	1.245E-04
Ra-226	ΣDOSE(j)		2.061E-03	2.055E-03	2.044E-03	2.004E-03	1.895E-03	1.557E-03	8.879E-04	1.245E-04
Ra-226	Ra-226	2.771E-10	2.720E-09	2.713E-09	2.698E-09	2.645E-09	2.501E-09	2.055E-09	1.172E-09	1.643E-10
Ra-226	Ra-226	3.989E-12	3.916E-11	3.905E-11	3.883E-11	3.807E-11	3.599E-11	2.957E-11	1.687E-11	2.365E-12
Ra-226	ΣDOSE(j)		2.760E-09	2.752E-09	2.736E-09	2.683E-09	2.537E-09	2.084E-09	1.189E-09	1.667E-10
Ra-226	Ra-226	1.998E-04	8.280E-04	8.257E-04	8.211E-04	8.051E-04	7.611E-04	6.254E-04	3.567E-04	5.004E-05
Ra-226	Ra-226	2.637E-10	1.093E-09	1.090E-09	1.084E-09	1.063E-09	1.005E-09	8.255E-10	4.709E-10	6.605E-11
Ra-226	Th-230	1.998E-04	1.784E-07	5.365E-07	1.250E-06	3.715E-06	1.050E-05	3.143E-05	7.277E-05	1.192E-04
Ra-226	Th-230	2.637E-10	2.355E-13	7.081E-13	1.650E-12	4.904E-12	1.386E-11	4.149E-11	9.605E-11	1.574E-10
Ra-226	Th-230	3.795E-12	3.390E-15	1.019E-14	2.375E-14	7.059E-14	1.994E-13	5.973E-13	1.383E-12	2.266E-12
Ra-226	U-234	1.998E-04	5.445E-13	3.825E-12	2.018E-11	1.782E-10	1.444E-09	1.362E-08	8.263E-08	2.843E-07
Ra-226	U-234	2.637E-10	7.187E-19	5.049E-18	2.664E-17	2.353E-16	1.905E-15	1.797E-14	1.091E-13	3.752E-13
Ra-226	U-234	3.795E-12	1.035E-20	7.267E-20	3.835E-19	3.386E-18	2.743E-17	2.587E-16	1.570E-15	5.401E-15
Ra-226	U-238	3.196E-07	6.128E-22	9.233E-21	1.076E-19	2.812E-18	6.566E-17	1.994E-15	3.375E-14	2.909E-13
Ra-226	U-238	4.219E-13	8.088E-28	1.219E-26	1.420E-25	3.712E-24	8.667E-23	2.632E-21	4.455E-20	3.840E-19

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	1.164E-29	1.754E-28	2.044E-27	5.343E-26	1.247E-24	3.789E-23	6.413E-22	5.528E-21
Ra-226	U-238	1.994E-04	3.824E-19	5.762E-18	6.713E-17	1.755E-15	4.097E-14	1.244E-12	2.106E-11	1.815E-10
Ra-226	U-238	2.633E-10	5.048E-25	7.605E-24	8.862E-23	2.316E-21	5.408E-20	1.642E-18	2.780E-17	2.396E-16
Ra-226	U-238	3.789E-12	7.264E-27	1.095E-25	1.276E-24	3.334E-23	7.784E-22	2.364E-20	4.002E-19	3.449E-18
Ra-226	ΣDOSE (j)		8.282E-04	8.262E-04	8.223E-04	8.088E-04	7.716E-04	6.568E-04	4.296E-04	1.696E-04
Ra-226	Ra-226	3.795E-12	1.573E-11	1.569E-11	1.560E-11	1.530E-11	1.446E-11	1.188E-11	6.778E-12	9.507E-13
Ra-226	Ra-226	4.196E-08	3.951E-07	3.940E-07	3.917E-07	3.841E-07	3.632E-07	2.984E-07	1.702E-07	2.386E-08
Ra-226	ΣDOSE (j)		3.951E-07	3.940E-07	3.918E-07	3.841E-07	3.632E-07	2.984E-07	1.702E-07	2.387E-08
Ra-226	Ra-226	5.538E-14	5.215E-13	5.200E-13	5.171E-13	5.070E-13	4.794E-13	3.939E-13	2.247E-13	3.150E-14
Ra-226	Ra-226	7.972E-16	7.506E-15	7.485E-15	7.443E-15	7.298E-15	6.900E-15	5.669E-15	3.234E-15	4.534E-16
Ra-226	ΣDOSE (j)		5.290E-13	5.275E-13	5.245E-13	5.143E-13	4.863E-13	3.995E-13	2.279E-13	3.196E-14
Ra-226	Ra-226	2.000E-07	2.541E-07	2.534E-07	2.520E-07	2.471E-07	2.336E-07	1.919E-07	1.095E-07	1.538E-08
Ra-226	Ra-226	2.640E-13	3.354E-13	3.345E-13	3.326E-13	3.261E-13	3.083E-13	2.533E-13	1.445E-13	2.030E-14
Ra-226	Th-230	2.000E-07	5.406E-11	1.638E-10	3.827E-10	1.139E-09	3.220E-09	9.646E-09	2.233E-08	3.660E-08
Ra-226	Th-230	2.640E-13	7.136E-17	2.162E-16	5.052E-16	1.504E-15	4.251E-15	1.273E-14	2.948E-14	4.831E-14
Ra-226	Th-230	3.800E-15	1.027E-18	3.112E-18	7.272E-18	2.165E-17	6.119E-17	1.833E-16	4.243E-16	6.953E-16
Ra-226	U-234	2.000E-07	1.635E-16	1.162E-15	6.167E-15	5.462E-14	4.428E-13	4.178E-12	2.536E-11	8.728E-11
Ra-226	U-234	2.640E-13	2.158E-22	1.534E-21	8.141E-21	7.209E-20	5.844E-19	5.514E-18	3.347E-17	1.152E-16
Ra-226	U-234	3.800E-15	3.106E-24	2.209E-23	1.172E-22	1.038E-21	8.412E-21	7.937E-20	4.818E-19	1.658E-18
Ra-226	U-238	3.200E-10	1.827E-25	2.794E-24	3.281E-23	8.610E-22	2.013E-20	6.118E-19	1.036E-17	8.937E-17
Ra-226	U-238	4.224E-16	0.000E+00	3.651E-30	4.286E-29	1.136E-27	2.658E-26	8.076E-25	1.367E-23	1.180E-22
Ra-226	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	1.619E-29	3.824E-28	1.162E-26	1.968E-25	1.698E-24
Ra-226	U-238	1.997E-07	1.140E-22	1.744E-21	2.047E-20	5.373E-19	1.256E-17	3.818E-16	6.463E-15	5.577E-14
Ra-226	U-238	2.636E-13	1.504E-28	2.302E-27	2.702E-26	7.092E-25	1.658E-23	5.039E-22	8.531E-21	7.361E-20
Ra-226	U-238	3.794E-15	1.399E-30	3.279E-29	3.888E-28	1.021E-26	2.387E-25	7.253E-24	1.228E-22	1.060E-21
Ra-226	ΣDOSE (j)		2.541E-07	2.535E-07	2.523E-07	2.482E-07	2.368E-07	2.016E-07	1.318E-07	5.206E-08
Ra-226	Ra-226	3.800E-15	4.828E-15	4.814E-15	4.787E-15	4.694E-15	4.438E-15	3.646E-15	2.080E-15	2.922E-16
Th-230	Th-230	9.996E-01	6.152E-01	6.152E-01	6.152E-01	6.151E-01	6.150E-01	6.144E-01	6.130E-01	6.079E-01
Th-230	Th-230	1.319E-06	8.120E-07	8.120E-07	8.120E-07	8.119E-07	8.117E-07	8.111E-07	8.091E-07	8.024E-07
Th-230	U-234	9.996E-01	2.828E-06	8.467E-06	1.969E-05	5.837E-05	1.641E-04	4.830E-04	1.073E-03	1.627E-03
Th-230	U-234	1.319E-06	3.733E-12	1.118E-11	2.599E-11	7.705E-11	2.166E-10	6.376E-10	1.416E-09	2.148E-09
Th-230	U-234	1.899E-08	5.374E-14	1.609E-13	3.740E-13	1.109E-12	3.117E-12	9.178E-12	2.039E-11	3.092E-11
Th-230	U-234	2.100E-04	5.941E-10	1.778E-09	4.135E-09	1.226E-08	3.446E-08	1.015E-07	2.254E-07	3.418E-07
Th-230	U-234	2.771E-10	7.842E-16	2.348E-15	5.458E-15	1.618E-14	4.549E-14	1.339E-13	2.975E-13	4.511E-13
Th-230	U-234	3.989E-12	1.129E-17	3.379E-17	7.857E-17	2.330E-16	6.547E-16	1.928E-15	4.282E-15	6.494E-15
Th-230	U-234	1.998E-04	5.652E-10	1.692E-09	3.934E-09	1.167E-08	3.278E-08	9.653E-08	2.144E-07	3.252E-07
Th-230	U-234	2.637E-10	7.461E-16	2.233E-15	5.193E-15	1.540E-14	4.328E-14	1.274E-13	2.831E-13	4.292E-13
Th-230	U-234	3.795E-12	1.074E-17	3.215E-17	7.475E-17	2.216E-16	6.229E-16	1.834E-15	4.074E-15	6.178E-15
Th-230	U-234	4.196E-08	1.187E-13	3.554E-13	8.264E-13	2.450E-12	6.886E-12	2.028E-11	4.504E-11	6.830E-11
Th-230	U-234	5.538E-14	1.567E-19	4.691E-19	1.091E-18	3.234E-18	9.090E-18	2.676E-17	5.946E-17	9.015E-17
Th-230	U-234	7.972E-16	2.256E-21	6.753E-21	1.570E-20	4.655E-20	1.308E-19	3.852E-19	8.558E-19	1.298E-18
Th-230	U-234	2.000E-07	5.659E-13	1.694E-12	3.939E-12	1.168E-11	3.282E-11	9.665E-11	2.147E-10	3.256E-10
Th-230	U-234	2.640E-13	7.470E-19	2.236E-18	5.199E-18	1.542E-17	4.333E-17	1.276E-16	2.834E-16	4.297E-16
Th-230	U-234	3.800E-15	1.075E-20	3.219E-20	7.484E-20	2.219E-19	6.237E-19	1.836E-18	4.079E-18	6.186E-18

Summary : Residential Default

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	4.260E-15	2.973E-14	1.564E-13	1.377E-12	1.111E-11	1.036E-10	6.097E-10	1.944E-09
Th-230	U-238	2.111E-09	5.623E-21	3.925E-20	2.065E-19	1.818E-18	1.467E-17	1.367E-16	8.048E-16	2.566E-15
Th-230	U-238	3.039E-11	8.094E-23	5.649E-22	2.972E-21	2.617E-20	2.111E-19	1.968E-18	1.158E-17	3.693E-17
Th-230	U-238	3.359E-07	8.947E-19	6.245E-18	3.285E-17	2.893E-16	2.334E-15	2.176E-14	1.281E-13	4.083E-13
Th-230	U-238	4.434E-13	1.181E-24	8.243E-24	4.337E-23	3.819E-22	3.081E-21	2.872E-20	1.690E-19	5.389E-19
Th-230	U-238	6.383E-15	1.700E-26	1.187E-25	6.242E-25	5.497E-24	4.435E-23	4.134E-22	2.433E-21	7.757E-21
Th-230	U-238	3.196E-07	8.513E-19	5.942E-18	3.126E-17	2.753E-16	2.221E-15	2.070E-14	1.218E-13	3.884E-13
Th-230	U-238	4.219E-13	1.124E-24	7.843E-24	4.126E-23	3.634E-22	2.932E-21	2.733E-20	1.608E-19	5.127E-19
Th-230	U-238	6.073E-15	1.617E-26	1.129E-25	5.939E-25	5.230E-24	4.220E-23	3.933E-22	2.315E-21	7.380E-21
Th-230	U-238	6.713E-11	1.788E-22	1.248E-21	6.565E-21	5.782E-20	4.665E-19	4.348E-18	2.559E-17	8.159E-17
Th-230	U-238	8.862E-17	2.359E-28	1.646E-27	8.666E-27	7.632E-26	6.157E-25	5.740E-24	3.378E-23	1.077E-22
Th-230	U-238	1.276E-18	3.308E-30	2.311E-29	1.247E-28	1.098E-27	8.863E-27	8.262E-26	4.863E-25	1.550E-24
Th-230	U-238	3.200E-10	8.523E-22	5.949E-21	3.129E-20	2.756E-19	2.224E-18	2.073E-17	1.220E-16	3.889E-16
Th-230	U-238	4.224E-16	1.124E-27	7.852E-27	4.131E-26	3.638E-25	2.935E-24	2.736E-23	1.610E-22	5.133E-22
Th-230	U-238	6.080E-18	1.577E-29	1.130E-28	5.943E-28	5.237E-27	4.225E-26	3.938E-25	2.318E-24	7.389E-24
Th-230	U-238	9.980E-01	2.658E-12	1.855E-11	9.760E-11	8.595E-10	6.935E-09	6.464E-08	3.805E-07	1.213E-06
Th-230	U-238	1.317E-06	3.509E-18	2.449E-17	1.288E-16	1.135E-15	9.154E-15	8.533E-14	5.022E-13	1.601E-12
Th-230	U-238	1.896E-08	5.050E-20	3.525E-19	1.854E-18	1.633E-17	1.318E-16	1.228E-15	7.229E-15	2.304E-14
Th-230	U-238	2.096E-04	5.583E-16	3.897E-15	2.050E-14	1.805E-13	1.457E-12	1.358E-11	7.991E-11	2.548E-10
Th-230	U-238	2.767E-10	7.370E-22	5.144E-21	2.706E-20	2.383E-19	1.923E-18	1.792E-17	1.055E-16	3.363E-16
Th-230	U-238	3.983E-12	1.061E-23	7.404E-23	3.895E-22	3.430E-21	2.767E-20	2.580E-19	1.518E-18	4.840E-18
Th-230	U-238	1.994E-04	5.312E-16	3.708E-15	1.950E-14	1.718E-13	1.386E-12	1.292E-11	7.603E-11	2.424E-10
Th-230	U-238	2.633E-10	7.012E-22	4.894E-21	2.575E-20	2.267E-19	1.829E-18	1.705E-17	1.004E-16	3.199E-16
Th-230	U-238	3.789E-12	1.009E-23	7.044E-23	3.706E-22	3.264E-21	2.633E-20	2.454E-19	1.445E-18	4.605E-18
Th-230	U-238	4.189E-08	1.116E-19	7.788E-19	4.097E-18	3.608E-17	2.911E-16	2.713E-15	1.597E-14	5.091E-14
Th-230	U-238	5.530E-14	1.473E-25	1.028E-24	5.408E-24	4.762E-23	3.842E-22	3.582E-21	2.108E-20	6.720E-20
Th-230	U-238	7.959E-16	2.120E-27	1.480E-26	7.784E-26	6.855E-25	5.531E-24	5.155E-23	3.034E-22	9.673E-22
Th-230	U-238	1.997E-07	5.318E-19	3.712E-18	1.953E-17	1.720E-16	1.387E-15	1.293E-14	7.612E-14	2.427E-13
Th-230	U-238	2.636E-13	7.020E-25	4.900E-24	2.578E-23	2.270E-22	1.831E-21	1.707E-20	1.005E-19	3.203E-19
Th-230	U-238	3.794E-15	1.011E-26	7.053E-26	3.710E-25	3.268E-24	2.636E-23	2.457E-22	1.446E-21	4.611E-21
Th-230	ΣDOSE(j)		6.152E-01	6.152E-01	6.152E-01	6.152E-01	6.151E-01	6.149E-01	6.140E-01	6.095E-01
Th-230	Th-230	1.899E-08	1.169E-08	1.169E-08	1.169E-08	1.169E-08	1.168E-08	1.167E-08	1.165E-08	1.155E-08
Th-230	Th-230	2.100E-04	1.292E-04	1.292E-04	1.292E-04	1.292E-04	1.292E-04	1.291E-04	1.288E-04	1.277E-04
Th-230	ΣDOSE(j)		1.292E-04	1.292E-04	1.292E-04	1.292E-04	1.292E-04	1.291E-04	1.288E-04	1.277E-04
Ra-226	Th-230	2.100E-04	4.456E-07	1.337E-06	3.112E-06	9.249E-06	2.613E-05	7.824E-05	1.811E-04	2.968E-04
Ra-226	Th-230	3.989E-12	8.466E-15	2.540E-14	5.914E-14	1.757E-13	4.964E-13	1.487E-12	3.441E-12	5.639E-12
Ra-226	U-234	2.100E-04	1.363E-12	9.543E-12	5.029E-11	4.438E-10	3.593E-09	3.389E-08	2.057E-07	7.074E-07
Ra-226	U-234	2.771E-10	1.799E-18	1.260E-17	6.638E-17	5.858E-16	4.743E-15	4.473E-14	2.715E-13	9.338E-13
Ra-226	U-234	3.989E-12	2.589E-20	1.813E-19	9.555E-19	8.432E-18	6.827E-17	6.439E-16	3.908E-15	1.344E-14
Ra-226	U-238	3.359E-07	1.536E-21	2.306E-20	2.682E-19	7.003E-18	1.634E-16	4.963E-15	8.401E-14	7.239E-13
Ra-226	U-238	4.434E-13	2.028E-27	3.044E-26	3.540E-25	9.243E-24	2.158E-22	6.552E-21	1.109E-19	9.556E-19
Ra-226	U-238	6.383E-15	2.919E-29	4.382E-28	5.096E-27	1.330E-25	3.106E-24	9.431E-23	1.596E-21	1.375E-20
Ra-226	U-238	2.096E-04	9.587E-19	1.439E-17	1.674E-16	4.370E-15	1.020E-13	3.097E-12	5.242E-11	4.517E-10
Ra-226	U-238	2.767E-10	1.265E-24	1.900E-23	2.209E-22	5.768E-21	1.346E-19	4.088E-18	6.920E-17	5.963E-16
Ra-226	U-238	3.983E-12	1.822E-26	2.734E-25	3.180E-24	8.302E-23	1.938E-21	5.885E-20	9.960E-19	8.583E-18
Ra-226	ΣDOSE(j)		4.456E-07	1.337E-06	3.113E-06	9.249E-06	2.613E-05	7.828E-05	1.813E-04	2.975E-04

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	1.706E-10	1.706E-10	1.706E-10	1.705E-10	1.705E-10	1.704E-10	1.700E-10	1.685E-10
Th-230	Th-230	3.989E-12	2.455E-12	2.455E-12	2.455E-12	2.455E-12	2.454E-12	2.452E-12	2.446E-12	2.426E-12
Th-230	ΣDOSE(j)		1.730E-10	1.730E-10	1.730E-10	1.730E-10	1.730E-10	1.728E-10	1.724E-10	1.710E-10
Ra-226	Th-230	2.771E-10	5.881E-13	1.765E-12	4.109E-12	1.221E-11	3.449E-11	1.033E-10	2.391E-10	3.918E-10
Th-230	Th-230	1.998E-04	1.229E-04	1.229E-04	1.229E-04	1.229E-04	1.229E-04	1.228E-04	1.225E-04	1.215E-04
Th-230	Th-230	2.637E-10	1.623E-10	1.623E-10	1.623E-10	1.623E-10	1.622E-10	1.621E-10	1.617E-10	1.603E-10
Th-230	ΣDOSE(j)		1.229E-04	1.229E-04	1.229E-04	1.229E-04	1.229E-04	1.228E-04	1.225E-04	1.215E-04
Th-230	Th-230	3.795E-12	2.336E-12	2.336E-12	2.336E-12	2.336E-12	2.335E-12	2.333E-12	2.327E-12	2.308E-12
Th-230	Th-230	4.196E-08	2.582E-08	2.582E-08	2.582E-08	2.582E-08	2.581E-08	2.579E-08	2.573E-08	2.551E-08
Th-230	ΣDOSE(j)		2.582E-08	2.582E-08	2.582E-08	2.582E-08	2.582E-08	2.579E-08	2.573E-08	2.552E-08
Ra-226	Th-230	4.196E-08	8.540E-11	2.563E-10	5.966E-10	1.773E-09	5.009E-09	1.500E-08	3.472E-08	5.689E-08
Ra-226	Th-230	7.972E-16	1.623E-18	4.869E-18	1.134E-17	3.369E-17	9.516E-17	2.850E-16	6.597E-16	1.081E-15
Ra-226	U-234	4.196E-08	2.612E-16	1.829E-15	9.640E-15	8.507E-14	6.888E-13	6.496E-12	3.943E-11	1.356E-10
Ra-226	U-234	5.538E-14	3.447E-22	2.415E-21	1.273E-20	1.123E-19	9.092E-19	8.575E-18	5.204E-17	1.790E-16
Ra-226	U-234	7.972E-16	4.962E-24	3.475E-23	1.832E-22	1.616E-21	1.309E-20	1.234E-19	7.491E-19	2.577E-18
Ra-226	U-238	6.713E-11	2.945E-25	4.420E-24	5.141E-23	1.342E-21	3.133E-20	9.515E-19	1.610E-17	1.388E-16
Ra-226	U-238	8.862E-17	0.000E+00	5.068E-30	6.786E-29	1.772E-27	4.136E-26	1.256E-24	2.126E-23	1.832E-22
Ra-226	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	2.550E-29	5.953E-28	1.808E-26	3.060E-25	2.637E-24
Ra-226	U-238	4.189E-08	1.837E-22	2.758E-21	3.208E-20	8.376E-19	1.955E-17	5.937E-16	1.005E-14	8.659E-14
Ra-226	U-238	5.530E-14	2.425E-28	3.641E-27	4.235E-26	1.106E-24	2.581E-23	7.837E-22	1.326E-20	1.143E-19
Ra-226	U-238	7.959E-16	3.041E-30	5.241E-29	6.095E-28	1.591E-26	3.715E-25	1.128E-23	1.909E-22	1.645E-21
Ra-226	ΣDOSE(j)		8.540E-11	2.563E-10	5.966E-10	1.773E-09	5.009E-09	1.500E-08	3.476E-08	5.703E-08
Th-230	Th-230	5.538E-14	3.409E-14	3.409E-14	3.408E-14	3.408E-14	3.407E-14	3.404E-14	3.396E-14	3.368E-14
Th-230	Th-230	7.972E-16	4.906E-16	4.906E-16	4.906E-16	4.906E-16	4.904E-16	4.900E-16	4.889E-16	4.848E-16
Th-230	ΣDOSE(j)		3.458E-14	3.458E-14	3.457E-14	3.457E-14	3.456E-14	3.453E-14	3.445E-14	3.416E-14
Ra-226	Th-230	5.538E-14	1.127E-16	3.383E-16	7.876E-16	2.340E-15	6.611E-15	1.980E-14	4.583E-14	7.510E-14
Th-230	Th-230	2.000E-07	1.231E-07	1.231E-07	1.231E-07	1.231E-07	1.230E-07	1.229E-07	1.226E-07	1.216E-07
Th-230	Th-230	2.640E-13	1.625E-13	1.625E-13	1.625E-13	1.625E-13	1.624E-13	1.623E-13	1.619E-13	1.605E-13
Th-230	ΣDOSE(j)		1.231E-07	1.231E-07	1.231E-07	1.231E-07	1.230E-07	1.229E-07	1.226E-07	1.216E-07
Th-230	Th-230	3.800E-15	2.339E-15	2.339E-15	2.339E-15	2.338E-15	2.338E-15	2.336E-15	2.330E-15	2.311E-15
U-234	U-234	9.996E-01	1.442E-01	1.438E-01	1.428E-01	1.395E-01	1.306E-01	1.035E-01	5.324E-02	5.210E-03
U-234	U-234	1.319E-06	1.904E-07	1.898E-07	1.885E-07	1.842E-07	1.723E-07	1.366E-07	7.028E-08	6.877E-09
U-234	U-238	1.599E-03	3.256E-10	9.740E-10	2.258E-09	6.618E-09	1.799E-08	4.698E-08	7.231E-08	2.358E-08
U-234	U-238	2.111E-09	4.298E-16	1.286E-15	2.980E-15	8.736E-15	2.375E-14	6.202E-14	9.545E-14	3.113E-14
U-234	U-238	3.039E-11	6.187E-18	1.851E-17	4.290E-17	1.257E-16	3.418E-16	8.927E-16	1.374E-15	4.480E-16
U-234	U-238	3.359E-07	6.839E-14	2.046E-13	4.742E-13	1.390E-12	3.779E-12	9.868E-12	1.519E-11	4.953E-12
U-234	U-238	4.434E-13	9.028E-20	2.700E-19	6.260E-19	1.835E-18	4.988E-18	1.303E-17	2.005E-17	6.538E-18
U-234	U-238	6.383E-15	1.299E-21	3.887E-21	9.011E-21	2.641E-20	7.179E-20	1.875E-19	2.886E-19	9.411E-20
U-234	U-238	3.196E-07	6.507E-14	1.946E-13	4.512E-13	1.323E-12	3.595E-12	9.389E-12	1.445E-11	4.712E-12
U-234	U-238	4.219E-13	8.589E-20	2.569E-19	5.956E-19	1.746E-18	4.745E-18	1.239E-17	1.907E-17	6.220E-18

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF (i)	DOSE (j, t), mrem/yr								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15		1.236E-21	3.698E-21	8.573E-21	2.513E-20	6.830E-20	1.784E-19	2.746E-19	8.953E-20
U-234	U-238	6.713E-11		1.367E-17	4.088E-17	9.477E-17	2.778E-16	7.551E-16	1.972E-15	3.035E-15	9.898E-16
U-234	U-238	8.862E-17		1.804E-23	5.397E-23	1.251E-22	3.667E-22	9.967E-22	2.603E-21	4.006E-21	1.307E-21
U-234	U-238	1.276E-18		2.597E-25	7.768E-25	1.801E-24	5.278E-24	1.435E-23	3.747E-23	5.767E-23	1.881E-23
U-234	U-238	3.200E-10		6.515E-17	1.949E-16	4.517E-16	1.324E-15	3.599E-15	9.400E-15	1.447E-14	4.718E-15
U-234	U-238	4.224E-16		8.600E-23	2.572E-22	5.963E-22	1.748E-21	4.751E-21	1.241E-20	1.910E-20	6.228E-21
U-234	U-238	6.080E-18		1.238E-24	3.703E-24	8.583E-24	2.516E-23	6.839E-23	1.786E-22	2.749E-22	8.964E-23
U-234	U-238	9.980E-01		2.032E-07	6.078E-07	1.409E-06	4.130E-06	1.123E-05	2.932E-05	4.512E-05	1.471E-05
U-234	U-238	1.317E-06		2.682E-13	8.022E-13	1.860E-12	5.451E-12	1.482E-11	3.870E-11	5.956E-11	1.942E-11
U-234	U-238	1.896E-08		3.861E-15	1.155E-14	2.677E-14	7.846E-14	2.133E-13	5.570E-13	8.573E-13	2.796E-13
U-234	U-238	2.096E-04		4.268E-11	1.277E-10	2.959E-10	8.674E-10	2.358E-09	6.158E-09	9.477E-09	3.091E-09
U-234	U-238	2.767E-10		5.633E-17	1.685E-16	3.906E-16	1.145E-15	3.112E-15	8.128E-15	1.251E-14	4.080E-15
U-234	U-238	3.983E-12		8.109E-19	2.425E-18	5.623E-18	1.648E-17	4.480E-17	1.170E-16	1.801E-16	5.872E-17
U-234	U-238	1.994E-04		4.060E-11	1.215E-10	2.815E-10	8.253E-10	2.243E-09	5.859E-09	9.017E-09	2.941E-09
U-234	U-238	2.633E-10		5.360E-17	1.603E-16	3.716E-16	1.089E-15	2.961E-15	7.733E-15	1.190E-14	3.881E-15
U-234	U-238	3.789E-12		7.715E-19	2.308E-18	5.349E-18	1.568E-17	4.262E-17	1.113E-16	1.713E-16	5.587E-17
U-234	U-238	4.189E-08		8.529E-15	2.551E-14	5.914E-14	1.733E-13	4.712E-13	1.231E-12	1.894E-12	6.176E-13
U-234	U-238	5.530E-14		1.126E-20	3.367E-20	7.806E-20	2.288E-19	6.220E-19	1.624E-18	2.500E-18	8.153E-19
U-234	U-238	7.959E-16		1.620E-22	4.847E-22	1.124E-21	3.294E-21	8.952E-21	2.338E-20	3.599E-20	1.174E-20
U-234	U-238	1.997E-07		4.065E-14	1.216E-13	2.819E-13	8.263E-13	2.246E-12	5.866E-12	9.028E-12	2.944E-12
U-234	U-238	2.636E-13		5.366E-20	1.605E-19	3.721E-19	1.091E-18	2.965E-18	7.743E-18	1.192E-17	3.886E-18
U-234	U-238	3.794E-15		7.724E-22	2.310E-21	5.356E-21	1.570E-20	4.267E-20	1.115E-19	1.715E-19	5.594E-20
U-234	ΣDOSE (j)			1.442E-01	1.438E-01	1.428E-01	1.395E-01	1.306E-01	1.035E-01	5.329E-02	5.225E-03
U-234	U-234	1.899E-08		2.741E-09	2.731E-09	2.713E-09	2.651E-09	2.481E-09	1.966E-09	1.012E-09	9.899E-11
U-234	U-234	2.100E-04		3.030E-05	3.020E-05	3.000E-05	2.931E-05	2.742E-05	2.173E-05	1.118E-05	1.094E-06
U-234	ΣDOSE (j)			3.030E-05	3.020E-05	3.000E-05	2.931E-05	2.743E-05	2.174E-05	1.118E-05	1.094E-06
U-234	U-234	2.771E-10		3.999E-11	3.986E-11	3.960E-11	3.868E-11	3.620E-11	2.869E-11	1.476E-11	1.444E-12
U-234	U-234	3.989E-12		5.756E-13	5.737E-13	5.699E-13	5.568E-13	5.210E-13	4.129E-13	2.125E-13	2.079E-14
U-234	ΣDOSE (j)			4.057E-11	4.043E-11	4.017E-11	3.924E-11	3.672E-11	2.910E-11	1.497E-11	1.465E-12
U-234	U-234	1.998E-04		2.882E-05	2.873E-05	2.854E-05	2.788E-05	2.609E-05	2.068E-05	1.064E-05	1.041E-06
U-234	U-234	2.637E-10		3.805E-11	3.792E-11	3.767E-11	3.681E-11	3.444E-11	2.729E-11	1.405E-11	1.374E-12
U-234	ΣDOSE (j)			2.882E-05	2.873E-05	2.854E-05	2.788E-05	2.609E-05	2.068E-05	1.064E-05	1.041E-06
U-234	U-234	3.795E-12		5.477E-13	5.459E-13	5.422E-13	5.298E-13	4.957E-13	3.929E-13	2.022E-13	1.978E-14
U-234	U-234	4.196E-08		6.054E-09	6.034E-09	5.994E-09	5.857E-09	5.480E-09	4.343E-09	2.235E-09	2.187E-10
U-234	ΣDOSE (j)			6.055E-09	6.035E-09	5.995E-09	5.857E-09	5.481E-09	4.344E-09	2.235E-09	2.187E-10
U-234	U-234	5.538E-14		7.992E-15	7.965E-15	7.913E-15	7.731E-15	7.234E-15	5.733E-15	2.950E-15	2.887E-16
U-234	U-234	7.972E-16		1.150E-16	1.147E-16	1.139E-16	1.113E-16	1.041E-16	8.252E-17	4.246E-17	4.155E-18
U-234	ΣDOSE (j)			8.107E-15	8.080E-15	8.027E-15	7.842E-15	7.338E-15	5.816E-15	2.993E-15	2.928E-16
U-234	U-234	2.000E-07		2.886E-08	2.876E-08	2.857E-08	2.792E-08	2.612E-08	2.070E-08	1.065E-08	1.042E-09
U-234	U-234	2.640E-13		3.809E-14	3.797E-14	3.772E-14	3.685E-14	3.448E-14	2.733E-14	1.406E-14	1.376E-15
U-234	ΣDOSE (j)			2.886E-08	2.876E-08	2.857E-08	2.792E-08	2.612E-08	2.070E-08	1.065E-08	1.042E-09
U-234	U-234	3.800E-15		5.483E-16	5.465E-16	5.429E-16	5.304E-16	4.963E-16	3.933E-16	2.024E-16	1.981E-17

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	7.087E-08	7.063E-08	7.017E-08	6.855E-08	6.415E-08	5.085E-08	2.618E-08	2.567E-09
U-238	U-238	1.599E-03	4.454E-03	4.439E-03	4.410E-03	4.308E-03	4.032E-03	3.196E-03	1.645E-03	1.612E-04
U-238	ΣDOSE(j)		4.454E-03	4.439E-03	4.410E-03	4.308E-03	4.032E-03	3.196E-03	1.645E-03	1.612E-04
U-238	U-238	2.111E-09	5.879E-09	5.860E-09	5.821E-09	5.687E-09	5.322E-09	4.218E-09	2.172E-09	2.127E-10
U-238	U-238	3.039E-11	8.462E-11	8.434E-11	8.378E-11	8.186E-11	7.660E-11	6.072E-11	3.126E-11	3.062E-12
U-238	ΣDOSE(j)		5.964E-09	5.944E-09	5.905E-09	5.769E-09	5.398E-09	4.279E-09	2.203E-09	2.158E-10
U-238	U-238	3.359E-07	9.355E-07	9.324E-07	9.262E-07	9.050E-07	8.468E-07	6.713E-07	3.456E-07	3.385E-08
U-238	U-238	4.434E-13	1.235E-12	1.231E-12	1.223E-12	1.195E-12	1.118E-12	8.861E-13	4.562E-13	4.468E-14
U-238	ΣDOSE(j)		9.355E-07	9.324E-07	9.262E-07	9.050E-07	8.468E-07	6.713E-07	3.456E-07	3.385E-08
U-238	U-238	6.383E-15	1.777E-14	1.772E-14	1.760E-14	1.719E-14	1.609E-14	1.275E-14	6.567E-15	6.432E-16
U-238	U-238	3.196E-07	8.900E-07	8.871E-07	8.812E-07	8.610E-07	8.057E-07	6.387E-07	3.288E-07	3.221E-08
U-238	ΣDOSE(j)		8.900E-07	8.871E-07	8.812E-07	8.610E-07	8.057E-07	6.387E-07	3.288E-07	3.221E-08
U-238	U-238	4.219E-13	1.175E-12	1.171E-12	1.163E-12	1.137E-12	1.064E-12	8.430E-13	4.341E-13	4.251E-14
U-238	U-238	6.073E-15	1.691E-14	1.685E-14	1.674E-14	1.636E-14	1.531E-14	1.213E-14	6.248E-15	6.119E-16
U-238	ΣDOSE(j)		1.192E-12	1.188E-12	1.180E-12	1.153E-12	1.079E-12	8.552E-13	4.403E-13	4.313E-14
U-238	U-238	6.713E-11	1.869E-10	1.863E-10	1.851E-10	1.808E-10	1.692E-10	1.341E-10	6.907E-11	6.765E-12
U-238	U-238	8.862E-17	2.468E-16	2.460E-16	2.443E-16	2.387E-16	2.234E-16	1.771E-16	9.117E-17	8.930E-18
U-238	ΣDOSE(j)		1.869E-10	1.863E-10	1.851E-10	1.808E-10	1.692E-10	1.341E-10	6.907E-11	6.765E-12
U-238	U-238	1.276E-18	3.552E-18	3.540E-18	3.517E-18	3.436E-18	3.215E-18	2.549E-18	1.312E-18	1.285E-19
U-238	U-238	3.200E-10	8.911E-10	8.882E-10	8.823E-10	8.620E-10	8.067E-10	6.394E-10	3.292E-10	3.225E-11
U-238	ΣDOSE(j)		8.911E-10	8.882E-10	8.823E-10	8.620E-10	8.067E-10	6.394E-10	3.292E-10	3.225E-11
U-238	U-238	4.224E-16	1.176E-15	1.172E-15	1.165E-15	1.138E-15	1.065E-15	8.440E-16	4.346E-16	4.256E-17
U-238	U-238	6.080E-18	1.693E-17	1.688E-17	1.676E-17	1.638E-17	1.533E-17	1.215E-17	6.255E-18	6.127E-19
U-238	ΣDOSE(j)		1.193E-15	1.189E-15	1.181E-15	1.154E-15	1.080E-15	8.562E-16	4.408E-16	4.318E-17
U-238	U-238	9.980E-01	1.864E-01	1.858E-01	1.846E-01	1.804E-01	1.688E-01	1.338E-01	6.888E-02	6.751E-03
U-238	U-238	1.317E-06	2.461E-07	2.453E-07	2.437E-07	2.381E-07	2.228E-07	1.766E-07	9.092E-08	8.912E-09
U-238	ΣDOSE(j)		1.864E-01	1.858E-01	1.846E-01	1.804E-01	1.688E-01	1.338E-01	6.888E-02	6.751E-03
U-238	U-238	1.896E-08	3.542E-09	3.531E-09	3.507E-09	3.427E-09	3.207E-09	2.542E-09	1.309E-09	1.283E-10
U-238	U-238	2.096E-04	3.916E-05	3.903E-05	3.877E-05	3.788E-05	3.545E-05	2.810E-05	1.447E-05	1.418E-06
U-238	ΣDOSE(j)		3.916E-05	3.903E-05	3.878E-05	3.789E-05	3.545E-05	2.810E-05	1.447E-05	1.418E-06
U-238	U-238	2.767E-10	5.169E-11	5.152E-11	5.118E-11	5.000E-11	4.679E-11	3.709E-11	1.910E-11	1.872E-12
U-238	U-238	3.983E-12	7.440E-13	7.416E-13	7.367E-13	7.198E-13	6.735E-13	5.339E-13	2.749E-13	2.694E-14
U-238	ΣDOSE(j)		5.244E-11	5.226E-11	5.192E-11	5.072E-11	4.747E-11	3.763E-11	1.937E-11	1.899E-12
U-238	U-238	1.994E-04	3.726E-05	3.713E-05	3.689E-05	3.604E-05	3.373E-05	2.673E-05	1.376E-05	1.349E-06
U-238	U-238	2.633E-10	4.918E-11	4.902E-11	4.869E-11	4.757E-11	4.452E-11	3.529E-11	1.817E-11	1.781E-12
U-238	ΣDOSE(j)		3.726E-05	3.713E-05	3.689E-05	3.604E-05	3.373E-05	2.673E-05	1.376E-05	1.349E-06
U-238	U-238	3.789E-12	7.079E-13	7.056E-13	7.009E-13	6.848E-13	6.408E-13	5.080E-13	2.615E-13	2.563E-14

Summary : Residential Default

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	7.826E-09	7.800E-09	7.748E-09	7.570E-09	7.084E-09	5.615E-09	2.891E-09	2.834E-10
U-238	ΣDOSE(j)		7.827E-09	7.801E-09	7.749E-09	7.571E-09	7.085E-09	5.616E-09	2.892E-09	2.834E-10
U-238	U-238	5.530E-14	1.033E-14	1.030E-14	1.023E-14	9.993E-15	9.351E-15	7.412E-15	3.816E-15	3.741E-16
U-238	U-238	7.959E-16	1.487E-16	1.482E-16	1.472E-16	1.438E-16	1.346E-16	1.067E-16	5.493E-17	5.384E-18
U-238	ΣDOSE(j)		1.048E-14	1.044E-14	1.037E-14	1.014E-14	9.486E-15	7.519E-15	3.871E-15	3.795E-16
U-238	U-238	1.997E-07	3.730E-08	3.718E-08	3.693E-08	3.609E-08	3.377E-08	2.677E-08	1.378E-08	1.351E-09
U-238	U-238	2.636E-13	4.924E-14	4.908E-14	4.875E-14	4.763E-14	4.457E-14	3.533E-14	1.819E-14	1.783E-15
U-238	ΣDOSE(j)		3.730E-08	3.718E-08	3.693E-08	3.609E-08	3.377E-08	2.677E-08	1.378E-08	1.351E-09
U-238	U-238	3.794E-15	7.088E-16	7.064E-16	7.017E-16	6.856E-16	6.416E-16	5.086E-16	2.619E-16	2.567E-17

THF(i) is the thread fraction of the parent nuclide.

Summary : Residential Default

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	1.000E+00	9.676E-01	9.061E-01	7.197E-01	3.728E-01	3.731E-02	5.192E-05	5.222E-15
Pb-210	Pb-210	1.320E-06	1.320E-06	1.277E-06	1.196E-06	9.501E-07	4.922E-07	4.924E-08	6.854E-11	6.893E-21
Pb-210	Ra-226	9.996E-01	0.000E+00	3.066E-02	8.878E-02	2.621E-01	5.669E-01	7.450E-01	4.470E-01	6.266E-02
Pb-210	Ra-226	2.100E-04	0.000E+00	6.440E-06	1.865E-05	5.505E-05	1.191E-04	1.565E-04	9.388E-05	1.316E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	6.127E-06	1.774E-05	5.237E-05	1.133E-04	1.489E-04	8.932E-05	1.252E-05
Pb-210	Ra-226	4.196E-08	0.000E+00	1.287E-09	3.727E-09	1.100E-08	2.380E-08	3.127E-08	1.876E-08	2.630E-09
Pb-210	Ra-226	2.000E-07	0.000E+00	6.134E-09	1.776E-08	5.244E-08	1.134E-07	1.491E-07	8.943E-08	1.254E-08
Pb-210	Th-230	9.996E-01	0.000E+00	6.681E-06	5.872E-05	6.018E-04	4.360E-03	2.602E-02	7.734E-02	1.357E-01
Pb-210	Th-230	2.100E-04	0.000E+00	1.403E-09	1.233E-08	1.264E-07	9.158E-07	5.466E-06	1.624E-05	2.850E-05
Pb-210	Th-230	1.998E-04	0.000E+00	1.335E-09	1.174E-08	1.203E-07	8.713E-07	5.200E-06	1.546E-05	2.712E-05
Pb-210	Th-230	4.196E-08	0.000E+00	2.804E-13	2.465E-12	2.526E-11	1.830E-10	1.092E-09	3.246E-09	5.696E-09
Pb-210	Th-230	2.000E-07	0.000E+00	1.337E-12	1.175E-11	1.204E-10	8.724E-10	5.206E-09	1.547E-08	2.715E-08
Pb-210	U-234	9.996E-01	0.000E+00	2.052E-11	5.434E-10	1.883E-08	4.240E-07	9.087E-06	8.090E-05	3.195E-04
Pb-210	U-234	2.100E-04	0.000E+00	4.310E-15	1.141E-13	3.955E-12	8.905E-11	1.909E-09	1.699E-08	6.712E-08
Pb-210	U-234	1.998E-04	0.000E+00	4.101E-15	1.086E-13	3.763E-12	8.473E-11	1.816E-09	1.617E-08	6.386E-08
Pb-210	U-234	4.196E-08	0.000E+00	8.614E-19	2.281E-17	7.903E-16	1.780E-14	3.814E-13	3.396E-12	1.341E-11
Pb-210	U-234	2.000E-07	0.000E+00	4.106E-18	1.087E-16	3.767E-15	8.483E-14	1.818E-12	1.619E-11	6.394E-11
Pb-210	U-238	1.599E-03	0.000E+00	2.320E-20	1.848E-18	2.153E-16	1.486E-14	1.116E-12	3.044E-11	3.212E-10
Pb-210	U-238	3.359E-07	0.000E+00	4.874E-24	3.882E-22	4.522E-20	3.121E-18	2.343E-16	6.394E-15	6.746E-14
Pb-210	U-238	3.196E-07	0.000E+00	4.637E-24	3.693E-22	4.302E-20	2.970E-18	2.229E-16	6.084E-15	6.419E-14
Pb-210	U-238	6.713E-11	0.000E+00	9.740E-28	7.758E-26	9.036E-24	6.238E-22	4.683E-20	1.278E-18	1.348E-17
Pb-210	U-238	3.200E-10	0.000E+00	4.643E-27	3.698E-25	4.307E-23	2.973E-21	2.232E-19	6.091E-18	6.426E-17
Pb-210	U-238	9.980E-01	0.000E+00	1.448E-17	1.153E-15	1.343E-13	9.273E-12	6.961E-10	1.900E-08	2.004E-07
Pb-210	U-238	2.096E-04	0.000E+00	3.041E-21	2.422E-19	2.822E-17	1.948E-15	1.462E-13	3.990E-12	4.210E-11
Pb-210	U-238	1.994E-04	0.000E+00	2.894E-21	2.305E-19	2.685E-17	1.853E-15	1.391E-13	3.796E-12	4.005E-11
Pb-210	U-238	4.189E-08	0.000E+00	6.078E-25	4.841E-23	5.639E-21	3.893E-19	2.922E-17	7.974E-16	8.413E-15
Pb-210	U-238	1.997E-07	0.000E+00	2.897E-24	2.308E-22	2.688E-20	1.855E-18	1.393E-16	3.801E-15	4.010E-14
Pb-210	ΣS(j):		1.000E+00	9.983E-01	9.949E-01	9.825E-01	9.444E-01	8.086E-01	5.246E-01	1.988E-01
Po-210	Pb-210	1.000E+00	0.000E+00	8.172E-01	9.104E-01	7.263E-01	3.763E-01	3.765E-02	5.240E-05	5.269E-15
Po-210	Po-210	1.000E+00	1.000E+00	1.579E-01	3.935E-03	9.623E-09	8.911E-25	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	0.000E+00	1.660E-02	7.271E-02	2.479E-01	5.564E-01	7.389E-01	4.437E-01	6.220E-02
Po-210	Ra-226	2.100E-04	0.000E+00	3.486E-06	1.527E-05	5.206E-05	1.169E-04	1.552E-04	9.319E-05	1.307E-05
Po-210	Ra-226	1.998E-04	0.000E+00	3.317E-06	1.453E-05	4.953E-05	1.112E-04	1.477E-04	8.867E-05	1.243E-05
Po-210	Ra-226	4.196E-08	0.000E+00	6.967E-10	3.052E-09	1.040E-08	2.336E-08	3.101E-08	1.862E-08	2.611E-09
Po-210	Ra-226	2.000E-07	0.000E+00	3.321E-09	1.455E-08	4.959E-08	1.113E-07	1.478E-07	8.877E-08	1.245E-08
Po-210	Th-230	9.996E-01	0.000E+00	2.726E-06	4.114E-05	5.383E-04	4.191E-03	2.562E-02	7.655E-02	1.345E-01
Po-210	Th-230	2.100E-04	0.000E+00	5.727E-10	8.641E-09	1.131E-07	8.803E-07	5.381E-06	1.608E-05	2.825E-05
Po-210	Th-230	1.998E-04	0.000E+00	5.448E-10	8.221E-09	1.076E-07	8.375E-07	5.120E-06	1.530E-05	2.687E-05
Po-210	Th-230	4.196E-08	0.000E+00	1.144E-13	1.727E-12	2.260E-11	1.759E-10	1.075E-09	3.213E-09	5.645E-09
Po-210	Th-230	2.000E-07	0.000E+00	5.455E-13	8.231E-12	1.077E-10	8.386E-10	5.126E-09	1.532E-08	2.691E-08
Po-210	U-234	9.996E-01	0.000E+00	6.770E-12	3.343E-10	1.601E-08	4.001E-07	8.895E-06	7.995E-05	3.166E-04
Po-210	U-234	2.100E-04	0.000E+00	1.422E-15	7.021E-14	3.363E-12	8.403E-11	1.868E-09	1.679E-08	6.650E-08
Po-210	U-234	1.998E-04	0.000E+00	1.353E-15	6.680E-14	3.199E-12	7.995E-11	1.778E-09	1.598E-08	6.327E-08
Po-210	U-234	4.196E-08	0.000E+00	2.842E-19	1.403E-17	6.720E-16	1.679E-14	3.734E-13	3.356E-12	1.329E-11
Po-210	U-234	2.000E-07	0.000E+00	1.355E-18	6.688E-17	3.203E-15	8.005E-14	1.780E-12	1.600E-11	6.335E-11
Po-210	U-238	1.599E-03	0.000E+00	6.444E-21	1.016E-18	1.745E-16	1.378E-14	1.086E-12	3.003E-11	3.181E-10
Po-210	U-238	3.359E-07	0.000E+00	1.353E-24	2.133E-22	3.666E-20	2.893E-18	2.281E-16	6.308E-15	6.682E-14
Po-210	U-238	3.196E-07	0.000E+00	1.288E-24	2.030E-22	3.487E-20	2.753E-18	2.170E-16	6.002E-15	6.358E-14

Summary : Residential Default

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	0.000E+00	2.705E-28	4.263E-26	7.325E-24	5.782E-22	4.558E-20	1.261E-18	1.335E-17
Po-210	U-238	3.200E-10	0.000E+00	1.289E-27	2.032E-25	3.492E-23	2.756E-21	2.173E-19	6.009E-18	6.366E-17
Po-210	U-238	9.980E-01	0.000E+00	4.021E-18	6.337E-16	1.089E-13	8.596E-12	6.776E-10	1.874E-08	1.985E-07
Po-210	U-238	2.096E-04	0.000E+00	8.445E-22	1.331E-19	2.287E-17	1.806E-15	1.423E-13	3.936E-12	4.170E-11
Po-210	U-238	1.994E-04	0.000E+00	8.035E-22	1.266E-19	2.176E-17	1.718E-15	1.354E-13	3.745E-12	3.967E-11
Po-210	U-238	4.189E-08	0.000E+00	1.688E-25	2.660E-23	4.571E-21	3.608E-19	2.844E-17	7.866E-16	8.333E-15
Po-210	U-238	1.997E-07	0.000E+00	8.045E-25	1.268E-22	2.179E-20	1.720E-18	1.356E-16	3.750E-15	3.972E-14
Po-210	ΣS(j):		1.000E+00	9.917E-01	9.871E-01	9.748E-01	9.371E-01	8.024E-01	5.206E-01	1.971E-01
Pb-210	Pb-210	1.900E-08	1.900E-08	1.839E-08	1.722E-08	1.368E-08	7.084E-09	7.088E-10	9.865E-13	9.921E-23
Pb-210	Ra-226	1.899E-08	0.000E+00	5.825E-10	1.687E-09	4.979E-09	1.077E-08	1.415E-08	8.492E-09	1.191E-09
Pb-210	Ra-226	3.989E-12	0.000E+00	1.224E-13	3.543E-13	1.046E-12	2.263E-12	2.973E-12	1.784E-12	2.501E-13
Pb-210	Ra-226	3.795E-12	0.000E+00	1.164E-13	3.371E-13	9.951E-13	2.153E-12	2.829E-12	1.697E-12	2.379E-13
Pb-210	Ra-226	7.972E-16	0.000E+00	2.445E-17	7.080E-17	2.090E-16	4.521E-16	5.941E-16	3.565E-16	4.997E-17
Pb-210	Ra-226	3.800E-15	0.000E+00	1.166E-16	3.375E-16	9.963E-16	2.155E-15	2.832E-15	1.699E-15	2.382E-16
Pb-210	Th-230	1.899E-08	0.000E+00	1.269E-13	1.116E-12	1.143E-11	8.284E-11	4.944E-10	1.469E-09	2.578E-09
Pb-210	Th-230	3.989E-12	0.000E+00	2.666E-17	2.344E-16	2.402E-15	1.740E-14	1.038E-13	3.087E-13	5.415E-13
Pb-210	Th-230	3.795E-12	0.000E+00	2.537E-17	2.230E-16	2.285E-15	1.656E-14	9.880E-14	2.937E-13	5.152E-13
Pb-210	Th-230	7.972E-16	0.000E+00	5.328E-21	4.683E-20	4.800E-19	3.477E-18	2.075E-17	6.168E-17	1.082E-16
Pb-210	Th-230	3.800E-15	0.000E+00	2.540E-20	2.232E-19	2.288E-18	1.658E-17	9.892E-17	2.940E-16	5.158E-16
Pb-210	U-234	1.899E-08	0.000E+00	3.899E-19	1.033E-17	3.577E-16	8.056E-15	1.727E-13	1.537E-12	6.071E-12
Pb-210	U-234	3.989E-12	0.000E+00	8.189E-23	2.169E-21	7.514E-20	1.692E-18	3.627E-17	3.229E-16	1.275E-15
Pb-210	U-234	3.795E-12	0.000E+00	7.792E-23	2.063E-21	7.149E-20	1.610E-18	3.450E-17	3.072E-16	1.213E-15
Pb-210	U-234	7.972E-16	0.000E+00	1.637E-26	4.334E-25	1.502E-23	3.381E-22	7.247E-21	6.452E-20	2.548E-19
Pb-210	U-234	3.800E-15	0.000E+00	7.801E-26	2.066E-24	7.158E-23	1.612E-21	3.455E-20	3.076E-19	1.215E-18
Pb-210	U-238	3.039E-11	0.000E+00	4.409E-28	3.512E-26	4.090E-24	2.824E-22	2.120E-20	5.784E-19	6.103E-18
Pb-210	U-238	6.383E-15	0.000E+00	9.261E-32	7.376E-30	8.592E-28	5.931E-26	4.452E-24	1.215E-22	1.282E-21
Pb-210	U-238	6.073E-15	0.000E+00	8.811E-32	7.018E-30	8.174E-28	5.643E-26	4.236E-24	1.156E-22	1.220E-21
Pb-210	U-238	1.276E-18	0.000E+00	1.851E-35	1.474E-33	1.717E-31	1.185E-29	8.897E-28	2.428E-26	2.562E-25
Pb-210	U-238	6.080E-18	0.000E+00	8.821E-35	7.026E-33	8.184E-31	5.650E-29	4.241E-27	1.157E-25	1.221E-24
Pb-210	U-238	1.896E-08	0.000E+00	2.751E-25	2.191E-23	2.552E-21	1.762E-19	1.323E-17	3.609E-16	3.808E-15
Pb-210	U-238	3.983E-12	0.000E+00	5.779E-29	4.603E-27	5.361E-25	3.701E-23	2.778E-21	7.581E-20	7.999E-19
Pb-210	U-238	3.789E-12	0.000E+00	5.498E-29	4.379E-27	5.101E-25	3.521E-23	2.643E-21	7.213E-20	7.610E-19
Pb-210	U-238	7.959E-16	0.000E+00	1.155E-32	9.198E-31	1.071E-28	7.396E-27	5.552E-25	1.515E-23	1.598E-22
Pb-210	U-238	3.794E-15	0.000E+00	5.505E-32	4.384E-30	5.107E-28	3.525E-26	2.646E-24	7.222E-23	7.619E-22
Pb-210	ΣS(j):		1.900E-08	1.897E-08	1.890E-08	1.867E-08	1.794E-08	1.536E-08	9.968E-09	3.776E-09
Ra-226	Ra-226	9.996E-01	9.996E-01	9.968E-01	9.912E-01	9.719E-01	9.189E-01	7.550E-01	4.306E-01	6.037E-02
Ra-226	Ra-226	1.319E-06	1.319E-06	1.316E-06	1.308E-06	1.283E-06	1.213E-06	9.965E-07	5.684E-07	7.968E-08
Ra-226	Th-230	9.996E-01	0.000E+00	4.324E-04	1.294E-03	4.270E-03	1.246E-02	3.773E-02	8.763E-02	1.437E-01
Ra-226	Th-230	1.319E-06	0.000E+00	5.708E-10	1.708E-09	5.636E-09	1.644E-08	4.981E-08	1.157E-07	1.897E-07
Ra-226	Th-230	1.899E-08	0.000E+00	8.216E-12	2.458E-11	8.113E-11	2.367E-10	7.169E-10	1.665E-09	2.731E-09
Ra-226	U-234	9.996E-01	0.000E+00	1.987E-09	1.781E-08	1.951E-07	1.686E-06	1.627E-05	9.938E-05	3.425E-04
Ra-226	U-234	1.319E-06	0.000E+00	2.623E-15	2.351E-14	2.575E-13	2.225E-12	2.147E-11	1.312E-10	4.521E-10
Ra-226	U-234	1.899E-08	0.000E+00	3.775E-17	3.384E-16	3.706E-15	3.203E-14	3.091E-13	1.888E-12	6.508E-12
Ra-226	U-238	1.599E-03	0.000E+00	2.991E-18	8.038E-17	2.928E-15	7.542E-14	2.371E-12	4.053E-11	3.504E-10
Ra-226	U-238	2.111E-09	0.000E+00	3.948E-24	1.061E-22	3.865E-21	9.955E-20	3.130E-18	5.351E-17	4.625E-16
Ra-226	U-238	3.039E-11	0.000E+00	5.683E-26	1.527E-24	5.563E-23	1.433E-21	4.505E-20	7.701E-19	6.657E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.866E-15	5.015E-14	1.827E-12	4.706E-11	1.480E-09	2.529E-08	2.186E-07

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	0.000E+00	2.464E-21	6.620E-20	2.412E-18	6.212E-17	1.953E-15	3.339E-14	2.886E-13
Ra-226	U-238	1.896E-08	0.000E+00	3.546E-23	9.529E-22	3.471E-20	8.941E-19	2.811E-17	4.806E-16	4.154E-15
Ra-226	ΣS(j):		9.996E-01	9.972E-01	9.925E-01	9.762E-01	9.313E-01	7.927E-01	5.184E-01	2.044E-01
Pb-210	Ra-226	1.319E-06	0.000E+00	4.047E-08	1.172E-07	3.459E-07	7.484E-07	9.833E-07	5.900E-07	8.271E-08
Pb-210	Ra-226	2.771E-10	0.000E+00	8.501E-12	2.461E-11	7.266E-11	1.572E-10	2.065E-10	1.239E-10	1.737E-11
Pb-210	Ra-226	2.637E-10	0.000E+00	8.088E-12	2.342E-11	6.913E-11	1.496E-10	1.965E-10	1.179E-10	1.653E-11
Pb-210	Ra-226	5.538E-14	0.000E+00	1.699E-15	4.919E-15	1.452E-14	3.141E-14	4.128E-14	2.476E-14	3.472E-15
Pb-210	Ra-226	2.640E-13	0.000E+00	8.097E-15	2.345E-14	6.922E-14	1.497E-13	1.967E-13	1.180E-13	1.655E-14
Pb-210	Th-230	1.319E-06	0.000E+00	8.818E-12	7.752E-11	7.944E-10	5.755E-09	3.435E-08	1.021E-07	1.791E-07
Pb-210	Th-230	2.771E-10	0.000E+00	1.852E-15	1.628E-14	1.669E-13	1.209E-12	7.215E-12	2.144E-11	3.762E-11
Pb-210	Th-230	2.637E-10	0.000E+00	1.762E-15	1.549E-14	1.588E-13	1.150E-12	6.864E-12	2.040E-11	3.579E-11
Pb-210	Th-230	5.538E-14	0.000E+00	3.702E-19	3.254E-18	3.335E-17	2.416E-16	1.442E-15	4.285E-15	7.518E-15
Pb-210	Th-230	2.640E-13	0.000E+00	1.764E-18	1.551E-17	1.589E-16	1.152E-15	6.872E-15	2.043E-14	3.584E-14
Pb-210	U-234	1.319E-06	0.000E+00	2.709E-17	7.173E-16	2.485E-14	5.597E-13	1.200E-11	1.068E-10	4.218E-10
Pb-210	U-234	2.771E-10	0.000E+00	5.689E-21	1.507E-19	5.220E-18	1.176E-16	2.519E-15	2.243E-14	8.860E-14
Pb-210	U-234	2.637E-10	0.000E+00	5.413E-21	1.433E-19	4.967E-18	1.118E-16	2.397E-15	2.134E-14	8.429E-14
Pb-210	U-234	5.538E-14	0.000E+00	1.137E-24	3.011E-23	1.043E-21	2.349E-20	5.035E-19	4.483E-18	1.771E-17
Pb-210	U-234	2.640E-13	0.000E+00	5.420E-24	1.435E-22	4.973E-21	1.120E-19	2.400E-18	2.137E-17	8.439E-17
Pb-210	U-238	2.111E-09	0.000E+00	3.063E-26	2.440E-24	2.842E-22	1.962E-20	1.473E-18	4.019E-17	4.240E-16
Pb-210	U-238	4.434E-13	0.000E+00	6.434E-30	5.124E-28	5.969E-26	4.120E-24	3.093E-22	8.441E-21	8.905E-20
Pb-210	U-238	4.219E-13	0.000E+00	6.121E-30	4.875E-28	5.679E-26	3.920E-24	2.943E-22	8.031E-21	8.473E-20
Pb-210	U-238	8.862E-17	0.000E+00	1.286E-33	1.024E-31	1.193E-29	8.234E-28	6.181E-26	1.687E-24	1.780E-23
Pb-210	U-238	4.224E-16	0.000E+00	6.129E-33	4.881E-31	5.686E-29	3.925E-27	2.946E-25	8.040E-24	8.483E-23
Pb-210	U-238	1.317E-06	0.000E+00	1.911E-23	1.522E-21	1.773E-19	1.224E-17	9.189E-16	2.508E-14	2.646E-13
Pb-210	U-238	2.767E-10	0.000E+00	4.015E-27	3.198E-25	3.725E-23	2.571E-21	1.930E-19	5.267E-18	5.557E-17
Pb-210	U-238	2.633E-10	0.000E+00	3.820E-27	3.042E-25	3.544E-23	2.446E-21	1.836E-19	5.011E-18	5.287E-17
Pb-210	U-238	5.530E-14	0.000E+00	8.023E-31	6.390E-29	7.443E-27	5.138E-25	3.857E-23	1.053E-21	1.110E-20
Pb-210	U-238	2.636E-13	0.000E+00	3.824E-30	3.046E-28	3.548E-26	2.449E-24	1.838E-22	5.017E-21	5.293E-20
Pb-210	ΣS(j):		0.000E+00	4.050E-08	1.173E-07	3.469E-07	7.544E-07	1.018E-06	6.925E-07	2.624E-07
Ra-226	Ra-226	1.899E-08	1.899E-08	1.894E-08	1.883E-08	1.847E-08	1.746E-08	1.434E-08	8.182E-09	1.147E-09
Ra-226	Ra-226	2.100E-04	2.100E-04	2.094E-04	2.082E-04	2.041E-04	1.930E-04	1.586E-04	9.045E-05	1.268E-05
Ra-226	ΣS(j):		2.100E-04	2.094E-04	2.082E-04	2.042E-04	1.930E-04	1.586E-04	9.046E-05	1.268E-05
Ra-226	Ra-226	2.771E-10	2.771E-10	2.764E-10	2.748E-10	2.695E-10	2.548E-10	2.093E-10	1.194E-10	1.674E-11
Ra-226	Ra-226	3.989E-12	3.989E-12	3.978E-12	3.956E-12	3.879E-12	3.667E-12	3.013E-12	1.719E-12	2.409E-13
Ra-226	ΣS(j):		2.811E-10	2.803E-10	2.788E-10	2.734E-10	2.584E-10	2.123E-10	1.211E-10	1.698E-11
Ra-226	Ra-226	1.998E-04	1.998E-04	1.992E-04	1.981E-04	1.942E-04	1.836E-04	1.509E-04	8.606E-05	1.206E-05
Ra-226	Ra-226	2.637E-10	2.637E-10	2.629E-10	2.615E-10	2.564E-10	2.424E-10	1.991E-10	1.136E-10	1.592E-11
Ra-226	Th-230	1.998E-04	0.000E+00	8.642E-08	2.585E-07	8.533E-07	2.489E-06	7.541E-06	1.751E-05	2.872E-05
Ra-226	Th-230	2.637E-10	0.000E+00	1.141E-13	3.412E-13	1.126E-12	3.286E-12	9.954E-12	2.312E-11	3.792E-11
Ra-226	Th-230	3.795E-12	0.000E+00	1.642E-15	4.912E-15	1.621E-14	4.730E-14	1.433E-13	3.327E-13	5.458E-13
Ra-226	U-234	1.998E-04	0.000E+00	3.971E-13	3.559E-12	3.898E-11	3.368E-10	3.251E-09	1.986E-08	6.845E-08
Ra-226	U-234	2.637E-10	0.000E+00	5.241E-19	4.698E-18	5.146E-17	4.446E-16	4.291E-15	2.622E-14	9.036E-14
Ra-226	U-234	3.795E-12	0.000E+00	7.544E-21	6.762E-20	7.407E-19	6.400E-18	6.177E-17	3.773E-16	1.301E-15
Ra-226	U-238	3.196E-07	0.000E+00	5.977E-22	1.606E-20	5.851E-19	1.507E-17	4.739E-16	8.100E-15	7.002E-14
Ra-226	U-238	4.219E-13	0.000E+00	7.890E-28	2.120E-26	7.724E-25	1.989E-23	6.255E-22	1.069E-20	9.243E-20

Summary : Residential Default

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	0.000E+00	1.136E-29	3.052E-28	1.112E-26	2.864E-25	9.003E-24	1.539E-22	1.330E-21
Ra-226	U-238	1.994E-04	0.000E+00	3.730E-19	1.002E-17	3.651E-16	9.404E-15	2.957E-13	5.055E-12	4.369E-11
Ra-226	U-238	2.633E-10	0.000E+00	4.923E-25	1.323E-23	4.820E-22	1.241E-20	3.903E-19	6.672E-18	5.768E-17
Ra-226	U-238	3.789E-12	0.000E+00	7.087E-27	1.904E-25	6.937E-24	1.787E-22	5.618E-21	9.604E-20	8.302E-19
Ra-226	ΣS(j):		1.998E-04	1.993E-04	1.983E-04	1.951E-04	1.861E-04	1.584E-04	1.036E-04	4.086E-05
Ra-226	Ra-226	3.795E-12	3.795E-12	3.785E-12	3.764E-12	3.690E-12	3.489E-12	2.867E-12	1.635E-12	2.292E-13
Ra-226	Ra-226	4.196E-08	4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	ΣS(j):		4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	Ra-226	5.538E-14	5.538E-14	5.523E-14	5.492E-14	5.385E-14	5.091E-14	4.183E-14	2.386E-14	3.345E-15
Ra-226	Ra-226	7.972E-16	7.972E-16	7.950E-16	7.905E-16	7.751E-16	7.328E-16	6.021E-16	3.434E-16	4.814E-17
Ra-226	ΣS(j):		5.618E-14	5.602E-14	5.571E-14	5.463E-14	5.164E-14	4.243E-14	2.420E-14	3.393E-15
Ra-226	Ra-226	2.000E-07	2.000E-07	1.994E-07	1.983E-07	1.945E-07	1.838E-07	1.511E-07	8.616E-08	1.208E-08
Ra-226	Ra-226	2.640E-13	2.640E-13	2.633E-13	2.618E-13	2.567E-13	2.427E-13	1.994E-13	1.137E-13	1.594E-14
Ra-226	Th-230	2.000E-07	0.000E+00	8.652E-11	2.588E-10	8.543E-10	2.492E-09	7.550E-09	1.753E-08	2.876E-08
Ra-226	Th-230	2.640E-13	0.000E+00	1.142E-16	3.417E-16	1.128E-15	3.290E-15	9.966E-15	2.314E-14	3.796E-14
Ra-226	Th-230	3.800E-15	0.000E+00	1.644E-18	4.918E-18	1.623E-17	4.736E-17	1.434E-16	3.331E-16	5.464E-16
Ra-226	U-234	2.000E-07	0.000E+00	3.975E-16	3.563E-15	3.903E-14	3.372E-13	3.255E-12	1.988E-11	6.853E-11
Ra-226	U-234	2.640E-13	0.000E+00	5.248E-22	4.704E-21	5.152E-20	4.452E-19	4.296E-18	2.625E-17	9.046E-17
Ra-226	U-234	3.800E-15	0.000E+00	7.553E-24	6.770E-23	7.416E-22	6.408E-21	6.184E-20	3.778E-19	1.302E-18
Ra-226	U-238	3.200E-10	0.000E+00	5.984E-25	1.608E-23	5.858E-22	1.509E-20	4.744E-19	8.110E-18	7.011E-17
Ra-226	U-238	4.224E-16	0.000E+00	7.899E-31	2.123E-29	7.733E-28	1.992E-26	6.262E-25	1.071E-23	9.254E-23
Ra-226	U-238	6.080E-18	0.000E+00	1.137E-32	3.056E-31	1.113E-29	2.867E-28	9.014E-27	1.541E-25	1.332E-24
Ra-226	U-238	1.997E-07	0.000E+00	3.734E-22	1.003E-20	3.656E-19	9.416E-18	2.960E-16	5.061E-15	4.375E-14
Ra-226	U-238	2.636E-13	0.000E+00	4.929E-28	1.325E-26	4.826E-25	1.243E-23	3.908E-22	6.680E-21	5.775E-20
Ra-226	U-238	3.794E-15	0.000E+00	7.095E-30	1.907E-28	6.946E-27	1.789E-25	5.625E-24	9.615E-23	8.312E-22
Ra-226	ΣS(j):		2.000E-07	1.995E-07	1.986E-07	1.953E-07	1.863E-07	1.586E-07	1.037E-07	4.091E-08
Ra-226	Ra-226	3.800E-15	3.800E-15	3.789E-15	3.768E-15	3.695E-15	3.493E-15	2.870E-15	1.637E-15	2.295E-16
Th-230	Th-230	9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.984E-01	9.960E-01	9.877E-01
Th-230	Th-230	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.318E-06	1.315E-06	1.304E-06
Th-230	U-234	9.996E-01	0.000E+00	9.176E-06	2.744E-05	9.040E-05	2.624E-04	7.816E-04	1.742E-03	2.644E-03
Th-230	U-234	1.319E-06	0.000E+00	1.211E-11	3.622E-11	1.193E-10	3.464E-10	1.032E-09	2.299E-09	3.490E-09
Th-230	U-234	1.899E-08	0.000E+00	1.743E-13	5.213E-13	1.718E-12	4.986E-12	1.485E-11	3.310E-11	5.023E-11
Th-230	U-234	2.100E-04	0.000E+00	1.927E-09	5.763E-09	1.899E-08	5.512E-08	1.642E-07	3.659E-07	5.553E-07
Th-230	U-234	2.771E-10	0.000E+00	2.544E-15	7.607E-15	2.506E-14	7.275E-14	2.167E-13	4.830E-13	7.330E-13
Th-230	U-234	3.989E-12	0.000E+00	3.662E-17	1.095E-16	3.608E-16	1.047E-15	3.119E-15	6.952E-15	1.055E-14
Th-230	U-234	1.998E-04	0.000E+00	1.834E-09	5.483E-09	1.807E-08	5.244E-08	1.562E-07	3.481E-07	5.283E-07
Th-230	U-234	2.637E-10	0.000E+00	2.421E-15	7.238E-15	2.385E-14	6.922E-14	2.062E-13	4.595E-13	6.974E-13
Th-230	U-234	3.795E-12	0.000E+00	3.484E-17	1.042E-16	3.432E-16	9.963E-16	2.968E-15	6.614E-15	1.004E-14
Th-230	U-234	4.196E-08	0.000E+00	3.852E-13	1.152E-12	3.795E-12	1.101E-11	3.281E-11	7.312E-11	1.110E-10
Th-230	U-234	5.538E-14	0.000E+00	5.084E-19	1.520E-18	5.009E-18	1.454E-17	4.331E-17	9.651E-17	1.465E-16
Th-230	U-234	7.972E-16	0.000E+00	7.318E-21	2.188E-20	7.210E-20	2.093E-19	6.233E-19	1.389E-18	2.108E-18
Th-230	U-234	2.000E-07	0.000E+00	1.836E-12	5.490E-12	1.809E-11	5.250E-11	1.564E-10	3.485E-10	5.290E-10
Th-230	U-234	2.640E-13	0.000E+00	2.424E-18	7.246E-18	2.388E-17	6.930E-17	2.064E-16	4.601E-16	6.982E-16
Th-230	U-234	3.800E-15	0.000E+00	3.488E-20	1.043E-19	3.437E-19	9.975E-19	2.971E-18	6.622E-18	1.005E-17

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	0.000E+00	2.072E-14	1.856E-13	2.031E-12	1.749E-11	1.668E-10	9.884E-10	3.158E-09
Th-230	U-238	2.111E-09	0.000E+00	2.734E-20	2.450E-19	2.680E-18	2.308E-17	2.202E-16	1.305E-15	4.168E-15
Th-230	U-238	3.039E-11	0.000E+00	3.936E-22	3.527E-21	3.858E-20	3.323E-19	3.170E-18	1.878E-17	5.999E-17
Th-230	U-238	3.359E-07	0.000E+00	4.351E-18	3.899E-17	4.265E-16	3.673E-15	3.504E-14	2.076E-13	6.632E-13
Th-230	U-238	4.434E-13	0.000E+00	5.743E-24	5.146E-23	5.630E-22	4.848E-21	4.626E-20	2.740E-19	8.754E-19
Th-230	U-238	6.383E-15	0.000E+00	8.267E-26	7.408E-25	8.104E-24	6.979E-23	6.658E-22	3.945E-21	1.260E-20
Th-230	U-238	3.196E-07	0.000E+00	4.140E-18	3.709E-17	4.058E-16	3.495E-15	3.334E-14	1.975E-13	6.310E-13
Th-230	U-238	4.219E-13	0.000E+00	5.464E-24	4.896E-23	5.357E-22	4.613E-21	4.401E-20	2.607E-19	8.329E-19
Th-230	U-238	6.073E-15	0.000E+00	7.866E-26	7.048E-25	7.710E-24	6.640E-23	6.335E-22	3.753E-21	1.199E-20
Th-230	U-238	6.713E-11	0.000E+00	8.695E-22	7.791E-21	8.524E-20	7.340E-19	7.003E-18	4.149E-17	1.325E-16
Th-230	U-238	8.862E-17	0.000E+00	1.148E-27	1.028E-26	1.125E-25	9.689E-25	9.244E-24	5.476E-23	1.749E-22
Th-230	U-238	1.276E-18	0.000E+00	1.652E-29	1.480E-28	1.620E-27	1.395E-26	1.331E-25	7.883E-25	2.518E-24
Th-230	U-238	3.200E-10	0.000E+00	4.145E-21	3.714E-20	4.063E-19	3.499E-18	3.338E-17	1.978E-16	6.318E-16
Th-230	U-238	4.224E-16	0.000E+00	5.471E-27	4.902E-26	5.363E-25	4.619E-24	4.406E-23	2.610E-22	8.339E-22
Th-230	U-238	6.080E-18	0.000E+00	7.875E-29	7.056E-28	7.720E-27	6.648E-26	6.342E-25	3.757E-24	1.200E-23
Th-230	U-238	9.980E-01	0.000E+00	1.293E-11	1.158E-10	1.267E-09	1.091E-08	1.041E-07	6.168E-07	1.970E-06
Th-230	U-238	1.317E-06	0.000E+00	1.706E-17	1.529E-16	1.673E-15	1.440E-14	1.374E-13	8.141E-13	2.601E-12
Th-230	U-238	1.896E-08	0.000E+00	2.456E-19	2.201E-18	2.408E-17	2.073E-16	1.978E-15	1.172E-14	3.744E-14
Th-230	U-238	2.096E-04	0.000E+00	2.715E-15	2.433E-14	2.662E-13	2.292E-12	2.187E-11	1.295E-10	4.138E-10
Th-230	U-238	2.767E-10	0.000E+00	3.584E-21	3.211E-20	3.513E-19	3.025E-18	2.886E-17	1.710E-16	5.463E-16
Th-230	U-238	3.983E-12	0.000E+00	5.159E-23	4.622E-22	5.057E-21	4.355E-20	4.155E-19	2.461E-18	7.863E-18
Th-230	U-238	1.994E-04	0.000E+00	2.583E-15	2.315E-14	2.532E-13	2.181E-12	2.080E-11	1.233E-10	3.937E-10
Th-230	U-238	2.633E-10	0.000E+00	3.410E-21	3.055E-20	3.343E-19	2.878E-18	2.746E-17	1.627E-16	5.197E-16
Th-230	U-238	3.789E-12	0.000E+00	4.908E-23	4.398E-22	4.811E-21	4.143E-20	3.953E-19	2.342E-18	7.481E-18
Th-230	U-238	4.189E-08	0.000E+00	5.426E-19	4.862E-18	5.319E-17	4.580E-16	4.370E-15	2.589E-14	8.270E-14
Th-230	U-238	5.530E-14	0.000E+00	7.162E-25	6.417E-24	7.021E-23	6.046E-22	5.768E-21	3.417E-20	1.092E-19
Th-230	U-238	7.959E-16	0.000E+00	1.031E-26	9.237E-26	1.011E-24	8.703E-24	8.303E-23	4.919E-22	1.571E-21
Th-230	U-238	1.997E-07	0.000E+00	2.586E-18	2.317E-17	2.535E-16	2.183E-15	2.083E-14	1.234E-13	3.942E-13
Th-230	U-238	2.636E-13	0.000E+00	3.414E-24	3.059E-23	3.347E-22	2.882E-21	2.749E-20	1.629E-19	5.204E-19
Th-230	U-238	3.794E-15	0.000E+00	4.914E-26	4.403E-25	4.817E-24	4.148E-23	3.958E-22	2.345E-21	7.490E-21
Th-230	ΣS(j):		9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.977E-01	9.903E-01
Th-230	Th-230	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.897E-08	1.892E-08	1.877E-08
Th-230	Th-230	2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Th-230	ΣS(j):		2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Ra-226	Th-230	2.100E-04	0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.926E-06	1.841E-05	3.019E-05
Ra-226	Th-230	3.989E-12	0.000E+00	1.726E-15	5.163E-15	1.704E-14	4.971E-14	1.506E-13	3.497E-13	5.736E-13
Ra-226	U-234	2.100E-04	0.000E+00	4.173E-13	3.741E-12	4.097E-11	3.540E-10	3.417E-09	2.087E-08	7.195E-08
Ra-226	U-234	2.771E-10	0.000E+00	5.509E-19	4.938E-18	5.408E-17	4.673E-16	4.510E-15	2.755E-14	9.497E-14
Ra-226	U-234	3.989E-12	0.000E+00	7.929E-21	7.107E-20	7.785E-19	6.727E-18	6.492E-17	3.966E-16	1.367E-15
Ra-226	U-238	3.359E-07	0.000E+00	6.282E-22	1.688E-20	6.150E-19	1.584E-17	4.980E-16	8.514E-15	7.360E-14
Ra-226	U-238	4.434E-13	0.000E+00	8.293E-28	2.228E-26	8.118E-25	2.091E-23	6.574E-22	1.124E-20	9.715E-20
Ra-226	U-238	6.383E-15	0.000E+00	1.194E-29	3.208E-28	1.169E-26	3.010E-25	9.463E-24	1.618E-22	1.398E-21
Ra-226	U-238	2.096E-04	0.000E+00	3.920E-19	1.053E-17	3.838E-16	9.885E-15	3.108E-13	5.313E-12	4.592E-11
Ra-226	U-238	2.767E-10	0.000E+00	5.175E-25	1.391E-23	5.066E-22	1.305E-20	4.102E-19	7.013E-18	6.062E-17
Ra-226	U-238	3.983E-12	0.000E+00	7.448E-27	2.002E-25	7.292E-24	1.878E-22	5.905E-21	1.009E-19	8.726E-19
Ra-226	ΣS(j):		0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.929E-06	1.843E-05	3.026E-05

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.770E-10	2.768E-10	2.762E-10	2.738E-10
Th-230	Th-230	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.988E-12	3.984E-12	3.975E-12	3.942E-12
Th-230	ΣS(j):		2.811E-10	2.811E-10	2.811E-10	2.811E-10	2.810E-10	2.808E-10	2.801E-10	2.778E-10
Ra-226	Th-230	2.771E-10	0.000E+00	1.199E-13	3.587E-13	1.184E-12	3.454E-12	1.046E-11	2.430E-11	3.985E-11
Th-230	Th-230	1.998E-04	1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	2.637E-10	2.637E-10	2.637E-10	2.637E-10	2.636E-10	2.636E-10	2.634E-10	2.627E-10	2.605E-10
Th-230	ΣS(j):		1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.794E-12	3.791E-12	3.782E-12	3.750E-12
Th-230	Th-230	4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.194E-08	4.191E-08	4.181E-08	4.146E-08
Th-230	ΣS(j):		4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.191E-08	4.181E-08	4.146E-08
Ra-226	Th-230	4.196E-08	0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.229E-10	1.584E-09	3.678E-09	6.033E-09
Ra-226	Th-230	7.972E-16	0.000E+00	3.449E-19	1.032E-18	3.405E-18	9.935E-18	3.009E-17	6.989E-17	1.146E-16
Ra-226	U-234	4.196E-08	0.000E+00	8.340E-17	7.475E-16	8.188E-15	7.075E-14	6.828E-13	4.172E-12	1.438E-11
Ra-226	U-234	5.538E-14	0.000E+00	1.101E-22	9.868E-22	1.081E-20	9.339E-20	9.014E-19	5.506E-18	1.898E-17
Ra-226	U-234	7.972E-16	0.000E+00	1.585E-24	1.420E-23	1.556E-22	1.344E-21	1.297E-20	7.926E-20	2.732E-19
Ra-226	U-238	6.713E-11	0.000E+00	1.255E-25	3.374E-24	1.229E-22	3.166E-21	9.953E-20	1.701E-18	1.471E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.657E-31	4.453E-30	1.622E-28	4.179E-27	1.314E-25	2.246E-24	1.941E-23
Ra-226	U-238	1.276E-18	0.000E+00	2.385E-33	6.410E-32	2.335E-30	6.015E-29	1.891E-27	3.233E-26	2.794E-25
Ra-226	U-238	4.189E-08	0.000E+00	7.834E-23	2.105E-21	7.669E-20	1.975E-18	6.211E-17	1.062E-15	9.178E-15
Ra-226	U-238	5.530E-14	0.000E+00	1.034E-28	2.779E-27	1.012E-25	2.607E-24	8.198E-23	1.401E-21	1.211E-20
Ra-226	U-238	7.959E-16	0.000E+00	1.488E-30	4.000E-29	1.457E-27	3.753E-26	1.180E-24	2.017E-23	1.744E-22
Ra-226	ΣS(j):		0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.230E-10	1.585E-09	3.683E-09	6.048E-09
Th-230	Th-230	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.536E-14	5.532E-14	5.519E-14	5.473E-14
Th-230	Th-230	7.972E-16	7.972E-16	7.972E-16	7.972E-16	7.971E-16	7.969E-16	7.962E-16	7.943E-16	7.877E-16
Th-230	ΣS(j):		5.618E-14	5.618E-14	5.618E-14	5.618E-14	5.616E-14	5.611E-14	5.598E-14	5.551E-14
Ra-226	Th-230	5.538E-14	0.000E+00	2.396E-17	7.168E-17	2.366E-16	6.902E-16	2.091E-15	4.855E-15	7.964E-15
Th-230	Th-230	2.000E-07	2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.639E-13	2.637E-13	2.631E-13	2.609E-13
Th-230	ΣS(j):		2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.799E-15	3.795E-15	3.786E-15	3.755E-15
U-234	U-234	9.996E-01	9.996E-01	9.963E-01	9.897E-01	9.669E-01	9.048E-01	7.171E-01	3.690E-01	3.607E-02
U-234	U-234	1.319E-06	1.319E-06	1.315E-06	1.306E-06	1.276E-06	1.194E-06	9.465E-07	4.871E-07	4.761E-08
U-234	U-238	1.599E-03	0.000E+00	4.501E-09	1.341E-08	4.368E-08	1.226E-07	3.240E-07	5.003E-07	1.632E-07
U-234	U-238	2.111E-09	0.000E+00	5.941E-15	1.770E-14	5.766E-14	1.619E-13	4.276E-13	6.604E-13	2.154E-13
U-234	U-238	3.039E-11	0.000E+00	8.551E-17	2.548E-16	8.299E-16	2.330E-15	6.155E-15	9.505E-15	3.100E-15
U-234	U-238	3.359E-07	0.000E+00	9.453E-13	2.817E-12	9.175E-12	2.576E-11	6.805E-11	1.051E-10	3.427E-11
U-234	U-238	4.434E-13	0.000E+00	1.248E-18	3.719E-18	1.211E-17	3.400E-17	8.982E-17	1.387E-16	4.524E-17
U-234	U-238	6.383E-15	0.000E+00	1.796E-20	5.353E-20	1.743E-19	4.894E-19	1.293E-18	1.997E-18	6.512E-19
U-234	U-238	3.196E-07	0.000E+00	8.994E-13	2.680E-12	8.729E-12	2.451E-11	6.474E-11	9.997E-11	3.261E-11
U-234	U-238	4.219E-13	0.000E+00	1.187E-18	3.538E-18	1.152E-17	3.235E-17	8.546E-17	1.320E-16	4.304E-17

Summary : Residential Default

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	0.000E+00	1.709E-20	5.093E-20	1.659E-19	4.656E-19	1.230E-18	1.900E-18	6.195E-19
U-234	U-238	6.713E-11	0.000E+00	1.889E-16	5.630E-16	1.834E-15	5.147E-15	1.360E-14	2.100E-14	6.849E-15
U-234	U-238	8.862E-17	0.000E+00	2.494E-22	7.432E-22	2.420E-21	6.794E-21	1.795E-20	2.772E-20	9.040E-21
U-234	U-238	1.276E-18	0.000E+00	3.589E-24	1.070E-23	3.484E-23	9.780E-23	2.584E-22	3.990E-22	1.301E-22
U-234	U-238	3.200E-10	0.000E+00	9.005E-16	2.684E-15	8.740E-15	2.453E-14	6.482E-14	1.001E-13	3.265E-14
U-234	U-238	4.224E-16	0.000E+00	1.189E-21	3.542E-21	1.154E-20	3.239E-20	8.556E-20	1.321E-19	4.309E-20
U-234	U-238	6.080E-18	0.000E+00	1.711E-23	5.099E-23	1.661E-22	4.662E-22	1.232E-21	1.902E-21	6.203E-22
U-234	U-238	9.980E-01	0.000E+00	2.808E-06	8.369E-06	2.726E-05	7.652E-05	2.022E-04	3.122E-04	1.018E-04
U-234	U-238	1.317E-06	0.000E+00	3.707E-12	1.105E-11	3.598E-11	1.010E-10	2.668E-10	4.121E-10	1.344E-10
U-234	U-238	1.896E-08	0.000E+00	5.336E-14	1.590E-13	5.179E-13	1.454E-12	3.841E-12	5.931E-12	1.934E-12
U-234	U-238	2.096E-04	0.000E+00	5.899E-10	1.758E-09	5.725E-09	1.607E-08	4.246E-08	6.557E-08	2.139E-08
U-234	U-238	2.767E-10	0.000E+00	7.787E-16	2.320E-15	7.557E-15	2.122E-14	5.605E-14	8.655E-14	2.823E-14
U-234	U-238	3.983E-12	0.000E+00	1.121E-17	3.340E-17	1.088E-16	3.054E-16	8.068E-16	1.246E-15	4.063E-16
U-234	U-238	1.994E-04	0.000E+00	5.612E-10	1.673E-09	5.447E-09	1.529E-08	4.040E-08	6.238E-08	2.035E-08
U-234	U-238	2.633E-10	0.000E+00	7.408E-16	2.208E-15	7.190E-15	2.018E-14	5.333E-14	8.235E-14	2.686E-14
U-234	U-238	3.789E-12	0.000E+00	1.066E-17	3.178E-17	1.035E-16	2.905E-16	7.676E-16	1.185E-15	3.866E-16
U-234	U-238	4.189E-08	0.000E+00	1.179E-13	3.513E-13	1.144E-12	3.212E-12	8.486E-12	1.310E-11	4.274E-12
U-234	U-238	5.530E-14	0.000E+00	1.556E-19	4.637E-19	1.510E-18	4.240E-18	1.120E-17	1.730E-17	5.641E-18
U-234	U-238	7.959E-16	0.000E+00	2.240E-21	6.675E-21	2.174E-20	6.102E-20	1.612E-19	2.490E-19	8.120E-20
U-234	U-238	1.997E-07	0.000E+00	5.619E-13	1.675E-12	5.454E-12	1.531E-11	4.045E-11	6.246E-11	2.037E-11
U-234	U-238	2.636E-13	0.000E+00	7.417E-19	2.210E-18	7.199E-18	2.021E-17	5.339E-17	8.245E-17	2.689E-17
U-234	U-238	3.794E-15	0.000E+00	1.068E-20	3.182E-20	1.036E-19	2.909E-19	7.685E-19	1.187E-18	3.871E-19
U-234	ΣS(j):		9.996E-01	9.963E-01	9.897E-01	9.670E-01	9.049E-01	7.173E-01	3.693E-01	3.617E-02
U-234	U-234	1.899E-08	1.899E-08	1.893E-08	1.880E-08	1.837E-08	1.719E-08	1.362E-08	7.011E-09	6.853E-10
U-234	U-234	2.100E-04	2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.900E-04	1.506E-04	7.750E-05	7.576E-06
U-234	ΣS(j):		2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.901E-04	1.506E-04	7.751E-05	7.576E-06
U-234	U-234	2.771E-10	2.771E-10	2.762E-10	2.744E-10	2.681E-10	2.509E-10	1.988E-10	1.023E-10	1.000E-11
U-234	U-234	3.989E-12	3.989E-12	3.976E-12	3.950E-12	3.859E-12	3.611E-12	2.862E-12	1.473E-12	1.439E-13
U-234	ΣS(j):		2.811E-10	2.802E-10	2.783E-10	2.719E-10	2.545E-10	2.017E-10	1.038E-10	1.014E-11
U-234	U-234	1.998E-04	1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	2.637E-10	2.637E-10	2.628E-10	2.611E-10	2.551E-10	2.387E-10	1.892E-10	9.733E-11	9.514E-12
U-234	ΣS(j):		1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	3.795E-12	3.795E-12	3.783E-12	3.758E-12	3.671E-12	3.435E-12	2.723E-12	1.401E-12	1.369E-13
U-234	U-234	4.196E-08	4.196E-08	4.182E-08	4.154E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	ΣS(j):		4.196E-08	4.182E-08	4.155E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	U-234	5.538E-14	5.538E-14	5.520E-14	5.484E-14	5.357E-14	5.013E-14	3.973E-14	2.044E-14	1.998E-15
U-234	U-234	7.972E-16	7.972E-16	7.946E-16	7.893E-16	7.712E-16	7.216E-16	5.719E-16	2.943E-16	2.876E-17
U-234	ΣS(j):		5.618E-14	5.600E-14	5.562E-14	5.435E-14	5.085E-14	4.030E-14	2.074E-14	2.027E-15
U-234	U-234	2.000E-07	2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	2.640E-13	2.640E-13	2.631E-13	2.614E-13	2.554E-13	2.390E-13	1.894E-13	9.745E-14	9.526E-15
U-234	ΣS(j):		2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	3.800E-15	3.800E-15	3.787E-15	3.762E-15	3.676E-15	3.440E-15	2.726E-15	1.403E-15	1.371E-16

Summary : Residential Default

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	5.450E-07	5.432E-07	5.396E-07	5.272E-07	4.933E-07	3.911E-07	2.014E-07	1.972E-08
U-238	U-238	1.599E-03	1.599E-03	1.594E-03	1.583E-03	1.547E-03	1.448E-03	1.148E-03	5.909E-04	5.787E-05
U-238	ΣS(j):		1.600E-03	1.595E-03	1.584E-03	1.548E-03	1.448E-03	1.148E-03	5.911E-04	5.789E-05
U-238	U-238	2.111E-09	2.111E-09	2.104E-09	2.090E-09	2.042E-09	1.911E-09	1.515E-09	7.800E-10	7.639E-11
U-238	U-238	3.039E-11	3.039E-11	3.029E-11	3.009E-11	2.940E-11	2.751E-11	2.180E-11	1.123E-11	1.100E-12
U-238	ΣS(j):		2.142E-09	2.134E-09	2.120E-09	2.072E-09	1.939E-09	1.537E-09	7.912E-10	7.749E-11
U-238	U-238	3.359E-07	3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	4.434E-13	4.434E-13	4.420E-13	4.390E-13	4.290E-13	4.014E-13	3.182E-13	1.638E-13	1.605E-14
U-238	ΣS(j):		3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	6.383E-15	6.383E-15	6.362E-15	6.319E-15	6.174E-15	5.778E-15	4.580E-15	2.358E-15	2.310E-16
U-238	U-238	3.196E-07	3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	ΣS(j):		3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	U-238	4.219E-13	4.219E-13	4.205E-13	4.177E-13	4.081E-13	3.819E-13	3.027E-13	1.559E-13	1.527E-14
U-238	U-238	6.073E-15	6.073E-15	6.053E-15	6.012E-15	5.874E-15	5.497E-15	4.357E-15	2.244E-15	2.197E-16
U-238	ΣS(j):		4.280E-13	4.265E-13	4.237E-13	4.140E-13	3.874E-13	3.071E-13	1.581E-13	1.549E-14
U-238	U-238	6.713E-11	6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	8.862E-17	8.862E-17	8.832E-17	8.774E-17	8.572E-17	8.022E-17	6.359E-17	3.274E-17	3.206E-18
U-238	ΣS(j):		6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	1.276E-18	1.276E-18	1.271E-18	1.263E-18	1.234E-18	1.155E-18	9.153E-19	4.712E-19	4.615E-20
U-238	U-238	3.200E-10	3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	ΣS(j):		3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	U-238	4.224E-16	4.224E-16	4.210E-16	4.182E-16	4.086E-16	3.824E-16	3.031E-16	1.561E-16	1.528E-17
U-238	U-238	6.080E-18	6.080E-18	6.060E-18	6.020E-18	5.882E-18	5.504E-18	4.363E-18	2.246E-18	2.200E-19
U-238	ΣS(j):		4.285E-16	4.271E-16	4.242E-16	4.145E-16	3.879E-16	3.075E-16	1.583E-16	1.550E-17
U-238	U-238	9.980E-01	9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.317E-06	1.317E-06	1.313E-06	1.304E-06	1.274E-06	1.192E-06	9.453E-07	4.867E-07	4.767E-08
U-238	ΣS(j):		9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.896E-08	1.896E-08	1.890E-08	1.877E-08	1.834E-08	1.716E-08	1.361E-08	7.005E-09	6.861E-10
U-238	U-238	2.096E-04	2.096E-04	2.089E-04	2.075E-04	2.028E-04	1.898E-04	1.504E-04	7.744E-05	7.585E-06
U-238	ΣS(j):		2.096E-04	2.089E-04	2.076E-04	2.028E-04	1.898E-04	1.504E-04	7.745E-05	7.586E-06
U-238	U-238	2.767E-10	2.767E-10	2.758E-10	2.740E-10	2.677E-10	2.505E-10	1.985E-10	1.022E-10	1.001E-11
U-238	U-238	3.983E-12	3.983E-12	3.970E-12	3.943E-12	3.853E-12	3.605E-12	2.858E-12	1.471E-12	1.441E-13
U-238	ΣS(j):		2.807E-10	2.798E-10	2.779E-10	2.715E-10	2.541E-10	2.014E-10	1.037E-10	1.016E-11
U-238	U-238	1.994E-04	1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	2.633E-10	2.633E-10	2.624E-10	2.607E-10	2.547E-10	2.383E-10	1.889E-10	9.726E-11	9.526E-12
U-238	ΣS(j):		1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	3.789E-12	3.789E-12	3.777E-12	3.752E-12	3.666E-12	3.430E-12	2.719E-12	1.400E-12	1.371E-13

Summary : Residential Default

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	4.189E-08	4.175E-08	4.148E-08	4.052E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	ΣS(j):		4.189E-08	4.176E-08	4.148E-08	4.053E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	U-238	5.530E-14	5.530E-14	5.511E-14	5.475E-14	5.349E-14	5.006E-14	3.968E-14	2.043E-14	2.001E-15
U-238	U-238	7.959E-16	7.959E-16	7.933E-16	7.880E-16	7.699E-16	7.205E-16	5.711E-16	2.941E-16	2.880E-17
U-238	ΣS(j):		5.609E-14	5.591E-14	5.554E-14	5.426E-14	5.078E-14	4.025E-14	2.072E-14	2.030E-15
U-238	U-238	1.997E-07	1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	2.636E-13	2.636E-13	2.627E-13	2.610E-13	2.550E-13	2.386E-13	1.891E-13	9.738E-14	9.537E-15
U-238	ΣS(j):		1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	3.794E-15	3.794E-15	3.781E-15	3.756E-15	3.670E-15	3.434E-15	2.722E-15	1.402E-15	1.373E-16

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 95.10 seconds

Total water/soil iteration failures = 1.900E+01.

RESidual RADioactivity (ResRad) Dose-Modeling Output
Residential (Town)

Summary : Residential (Town)

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Time = 0.000E+00	13
Time = 1.000E+00	14
Time = 3.000E+00	15
Time = 1.000E+01	16
Time = 3.000E+01	17
Time = 1.000E+02	18
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Summary : Residential (Town)

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1 (1)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1 (2)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1 (3)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1 (4)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1 (5)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1 (6)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1 (7)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1 (8)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1 (9)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1 (10)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1 (11)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1 (12)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1 (13)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1 (14)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1 (15)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1 (16)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1 (17)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1 (18)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1 (19)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1 (20)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.129E-02	2.077E-02	DCF2 (1)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2 (2)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2 (3)
B-1	Po-210	1.580E-02	1.582E-02	DCF2 (4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2 (5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2 (8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2 (11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2 (14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2 (17)
B-1	Th-230	3.760E-01	3.759E-01	DCF2 (20)
B-1	U-234	3.480E-02	3.479E-02	DCF2 (35)
B-1	U-238	2.970E-02	2.973E-02	DCF2 (50)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2 (51)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2 (66)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	2.585E-03	2.575E-03	DCF3 (1)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3 (2)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3 (3)
D-1	Po-210	4.480E-03	4.477E-03	DCF3 (4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3 (8)
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3 (11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3 (14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3 (17)
D-1	Th-230	7.920E-04	7.918E-04	DCF3 (20)
D-1	U-234	1.830E-04	1.831E-04	DCF3 (35)

Summary : Residential (Town)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	U-238	1.650E-04	1.650E-04	DCF3(50)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(51)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(66)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(35,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(35,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(35,3)
D-34				

Summary : Residential (Town)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(50,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(50,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(50,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(66,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(66,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(66,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(35,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(35,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(50,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(50,2)
D-5				

Summary : Residential (Town)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5				
D-5	U-238+D1 , fish	1.000E+01	1.000E+01	BIOFAC(66,1)
D-5	U-238+D1 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(66,2)
D-5				

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Residential (Town)

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.200E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(35)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(50)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(35)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(50)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.690E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ

Summary : Residential (Town)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsat. zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.632E-02	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC (5)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC (20)
R016	Unsat. zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)

Summary : Residential (Town)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (35)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (35,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (35)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (35)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (35)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (50)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (50,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (50)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (50)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (50)
R017	Inhalation rate (m**3/yr)	6.192E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	2.600E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.560E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)

Summary : Residential (Town)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	1.900E+00	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.900E+00	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	8.200E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	2.500E-01	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	0.000E+00	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	0.000E+00	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	0.000E+00	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	0.000E+00	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	0.000E+00	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Summary : Residential (Town)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary : Residential (Town)

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Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residential (Town)

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	2000.00 square meters	Pb-210	1.000E+00
Thickness:	2.00 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	1.000E+00
		Th-230	1.000E+00
		U-234	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.821E+00	3.812E+00	3.794E+00	3.734E+00	3.567E+00	3.042E+00	1.999E+00	8.087E-01
M(t):	3.184E-01	3.176E-01	3.162E-01	3.112E-01	2.972E-01	2.535E-01	1.666E-01	6.739E-02

Maximum TDOSE(t): 3.821E+00 mrem/yr at t = 0.000E+00 years

Summary : Residential (Town)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.324E-03	0.0006	3.544E-04	0.0001	0.000E+00	0.0000	2.759E-02	0.0072	0.000E+00	0.0000	0.000E+00	0.0000	2.934E-01	0.0768
Po-210	7.734E-06	0.0000	8.701E-05	0.0000	0.000E+00	0.0000	1.942E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	1.217E-01	0.0318
Ra-226	3.142E+00	0.8222	4.308E-04	0.0001	0.000E+00	0.0000	3.997E-02	0.0105	0.000E+00	0.0000	0.000E+00	0.0000	6.593E-02	0.0173
Th-230	1.024E-03	0.0003	4.539E-03	0.0012	0.000E+00	0.0000	7.607E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	4.716E-02	0.0123
U-234	1.144E-04	0.0000	4.194E-04	0.0001	0.000E+00	0.0000	4.339E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.088E-02	0.0028
U-238	4.887E-02	0.0128	3.583E-04	0.0001	0.000E+00	0.0000	4.209E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.055E-02	0.0028
Total	3.194E+00	0.8359	6.189E-03	0.0016	0.000E+00	0.0000	7.112E-02	0.0186	0.000E+00	0.0000	0.000E+00	0.0000	5.496E-01	0.1438

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.236E-01	0.0847
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-01	0.0324
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.248E+00	0.8501
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.349E-02	0.0140
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.184E-02	0.0031
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.020E-02	0.0158
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.821E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Town)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.255E-03	0.0006	4.140E-04	0.0001	0.000E+00	0.0000	2.848E-02	0.0075	0.000E+00	0.0000	0.000E+00	0.0000	3.833E-01	0.1006
Po-210	1.221E-06	0.0000	1.374E-05	0.0000	0.000E+00	0.0000	3.068E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.921E-02	0.0050
Ra-226	3.133E+00	0.8220	4.419E-04	0.0001	0.000E+00	0.0000	4.075E-02	0.0107	0.000E+00	0.0000	0.000E+00	0.0000	7.677E-02	0.0201
Th-230	2.383E-03	0.0006	4.539E-03	0.0012	0.000E+00	0.0000	7.782E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	4.719E-02	0.0124
U-234	1.141E-04	0.0000	4.181E-04	0.0001	0.000E+00	0.0000	4.325E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.084E-02	0.0028
U-238	4.871E-02	0.0128	3.571E-04	0.0001	0.000E+00	0.0000	4.195E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.051E-02	0.0028
Total	3.187E+00	0.8360	6.184E-03	0.0016	0.000E+00	0.0000	7.117E-02	0.0187	0.000E+00	0.0000	0.000E+00	0.0000	5.478E-01	0.1437

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.144E-01	0.1087
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.954E-02	0.0051
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.251E+00	0.8529
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.489E-02	0.0144
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.181E-02	0.0031
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.000E-02	0.0157
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.812E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Town)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.112E-03	0.0006	4.003E-04	0.0001	0.000E+00	0.0000	2.695E-02	0.0071	0.000E+00	0.0000	0.000E+00	0.0000	3.766E-01	0.0992
Po-210	3.044E-08	0.0000	3.425E-07	0.0000	0.000E+00	0.0000	7.648E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.789E-04	0.0001
Ra-226	3.116E+00	0.8212	4.650E-04	0.0001	0.000E+00	0.0000	4.225E-02	0.0111	0.000E+00	0.0000	0.000E+00	0.0000	1.003E-01	0.0264
Th-230	5.090E-03	0.0013	4.539E-03	0.0012	0.000E+00	0.0000	8.141E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	4.727E-02	0.0125
U-234	1.134E-04	0.0000	4.154E-04	0.0001	0.000E+00	0.0000	4.297E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.077E-02	0.0028
U-238	4.839E-02	0.0128	3.547E-04	0.0001	0.000E+00	0.0000	4.167E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.045E-02	0.0028
Total	3.171E+00	0.8358	6.175E-03	0.0016	0.000E+00	0.0000	7.087E-02	0.0187	0.000E+00	0.0000	0.000E+00	0.0000	5.458E-01	0.1439

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.060E-01	0.1070
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.870E-04	0.0001
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.259E+00	0.8588
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.771E-02	0.0152
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.173E-02	0.0031
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.961E-02	0.0157
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.794E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Town)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.678E-03	0.0004	3.183E-04	0.0001	0.000E+00	0.0000	2.142E-02	0.0057	0.000E+00	0.0000	0.000E+00	0.0000	2.995E-01	0.0802
Po-210	7.444E-14	0.0000	8.375E-13	0.0000	0.000E+00	0.0000	1.870E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.171E-09	0.0000
Ra-226	3.055E+00	0.8183	5.334E-04	0.0001	0.000E+00	0.0000	4.664E-02	0.0125	0.000E+00	0.0000	0.000E+00	0.0000	1.712E-01	0.0458
Th-230	1.445E-02	0.0039	4.541E-03	0.0012	0.000E+00	0.0000	9.491E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	4.768E-02	0.0128
U-234	1.114E-04	0.0000	4.061E-04	0.0001	0.000E+00	0.0000	4.198E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.053E-02	0.0028
U-238	4.728E-02	0.0127	3.466E-04	0.0001	0.000E+00	0.0000	4.072E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.021E-02	0.0027
Total	3.119E+00	0.8353	6.145E-03	0.0016	0.000E+00	0.0000	6.983E-02	0.0187	0.000E+00	0.0000	0.000E+00	0.0000	5.391E-01	0.1444

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.229E-01	0.0865
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.191E-09	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.274E+00	0.8767
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.762E-02	0.0181
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.146E-02	0.0031
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.824E-02	0.0156
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.734E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Town)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	8.693E-04	0.0002	1.649E-04	0.0000	0.000E+00	0.0000	1.109E-02	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	1.552E-01	0.0435
Po-210	6.893E-30	0.0000	7.756E-29	0.0000	0.000E+00	0.0000	1.732E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.084E-25	0.0000
Ra-226	2.889E+00	0.8101	6.455E-04	0.0002	0.000E+00	0.0000	5.359E-02	0.0150	0.000E+00	0.0000	0.000E+00	0.0000	2.947E-01	0.0826
Th-230	4.019E-02	0.0113	4.545E-03	0.0013	0.000E+00	0.0000	1.388E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	4.976E-02	0.0140
U-234	1.091E-04	0.0000	3.808E-04	0.0001	0.000E+00	0.0000	3.931E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	9.857E-03	0.0028
U-238	4.424E-02	0.0124	3.244E-04	0.0001	0.000E+00	0.0000	3.810E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	9.551E-03	0.0027
Total	2.975E+00	0.8340	6.060E-03	0.0017	0.000E+00	0.0000	6.685E-02	0.0187	0.000E+00	0.0000	0.000E+00	0.0000	5.190E-01	0.1455

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.673E-01	0.0469
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-25	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.238E+00	0.9079
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.588E-02	0.0269
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-02	0.0030
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.450E-02	0.0153
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.567E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Town)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	8.698E-05	0.0000	1.650E-05	0.0000	0.000E+00	0.0000	1.110E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.552E-02	0.0051
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.375E+00	0.7806	6.538E-04	0.0002	0.000E+00	0.0000	5.234E-02	0.0172	0.000E+00	0.0000	0.000E+00	0.0000	3.584E-01	0.1178
Th-230	1.197E-01	0.0393	4.561E-03	0.0015	0.000E+00	0.0000	3.042E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	6.035E-02	0.0198
U-234	1.340E-04	0.0000	3.044E-04	0.0001	0.000E+00	0.0000	3.128E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	7.844E-03	0.0026
U-238	3.507E-02	0.0115	2.572E-04	0.0001	0.000E+00	0.0000	3.021E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	7.572E-03	0.0025
Total	2.530E+00	0.8315	5.793E-03	0.0019	0.000E+00	0.0000	5.711E-02	0.0188	0.000E+00	0.0000	0.000E+00	0.0000	4.497E-01	0.1478

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.674E-02	0.0055
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.786E+00	0.9158
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.876E-01	0.0617
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.595E-03	0.0028
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.320E-02	0.0142
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.042E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Town)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.211E-07	0.0000	2.296E-08	0.0000	0.000E+00	0.0000	1.545E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.161E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.355E+00	0.6777	3.827E-04	0.0002	0.000E+00	0.0000	3.051E-02	0.0153	0.000E+00	0.0000	0.000E+00	0.0000	2.136E-01	0.1069
Th-230	2.766E-01	0.1384	4.595E-03	0.0023	0.000E+00	0.0000	6.562E-03	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	8.479E-02	0.0424
U-234	3.566E-04	0.0002	1.628E-04	0.0001	0.000E+00	0.0000	1.679E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.137E-03	0.0021
U-238	1.806E-02	0.0090	1.325E-04	0.0001	0.000E+00	0.0000	1.556E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.901E-03	0.0020
Total	1.650E+00	0.8253	5.273E-03	0.0026	0.000E+00	0.0000	3.740E-02	0.0187	0.000E+00	0.0000	0.000E+00	0.0000	3.064E-01	0.1533

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.330E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.599E+00	0.8000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.726E-01	0.1864
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.538E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.824E-03	0.0024
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.037E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.225E-02	0.0111
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.538E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.999E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Town)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.217E-17	0.0000	2.309E-18	0.0000	0.000E+00	0.0000	1.554E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.173E-15	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.899E-01	0.2348	5.365E-05	0.0001	0.000E+00	0.0000	4.278E-03	0.0053	0.000E+00	0.0000	0.000E+00	0.0000	2.994E-02	0.0370
Th-230	4.531E-01	0.5603	4.607E-03	0.0057	0.000E+00	0.0000	1.053E-02	0.0130	0.000E+00	0.0000	0.000E+00	0.0000	1.123E-01	0.1388
U-234	1.084E-03	0.0013	2.743E-05	0.0000	0.000E+00	0.0000	4.087E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	6.721E-04	0.0008
U-238	1.769E-03	0.0022	1.302E-05	0.0000	0.000E+00	0.0000	1.529E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.830E-04	0.0005
Total	6.458E-01	0.7986	4.701E-03	0.0058	0.000E+00	0.0000	1.487E-02	0.0184	0.000E+00	0.0000	0.000E+00	0.0000	1.433E-01	0.1772

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.662E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.343E-15	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.247E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.242E-01	0.2772
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.854E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.805E-01	0.7179
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.825E-03	0.0023
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.816E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.181E-03	0.0027
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.343E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.087E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Town)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210+D	Pb-210+D	1.000E+00	1.781E-01	1.723E-01	1.614E-01	1.282E-01	6.641E-02	6.644E-03	9.247E-06	9.300E-16
Pb-210+D	Po-210	1.000E+00	1.455E-01	2.421E-01	2.447E-01	1.947E-01	1.009E-01	1.009E-02	1.405E-05	1.413E-15
Pb-210+D	ΣDSR(j)		3.236E-01	4.144E-01	4.060E-01	3.229E-01	1.673E-01	1.674E-02	2.330E-05	2.343E-15
Pb-210+D1	Pb-210+D1	1.320E-06	2.401E-07	2.323E-07	2.175E-07	1.728E-07	8.951E-08	8.956E-09	1.246E-11	1.254E-21
Pb-210+D2	Pb-210+D2	1.900E-08	6.920E-09	6.696E-09	6.270E-09	4.981E-09	2.580E-09	2.582E-10	3.593E-13	3.614E-23
Po-210	Po-210	1.000E+00	1.237E-01	1.954E-02	4.870E-04	1.191E-09	1.103E-25	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	9.996E-01	3.241E+00	3.232E+00	3.214E+00	3.152E+00	2.979E+00	2.448E+00	1.396E+00	1.957E-01
Ra-226+D	Pb-210+D	9.996E-01	2.832E-03	8.292E-03	1.863E-02	4.944E-02	1.036E-01	1.348E-01	8.083E-02	1.133E-02
Ra-226+D	Po-210	9.996E-01	1.729E-03	8.246E-03	2.365E-02	7.054E-02	1.530E-01	2.013E-01	1.208E-01	1.693E-02
Ra-226+D	ΣDSR(j)		3.246E+00	3.249E+00	3.256E+00	3.272E+00	3.236E+00	2.784E+00	1.598E+00	2.240E-01
Ra-226+D	Ra-226+D	1.319E-06	4.278E-06	4.266E-06	4.243E-06	4.160E-06	3.933E-06	3.231E-06	1.843E-06	2.584E-07
Ra-226+D	Pb-210+D1	1.319E-06	3.816E-09	1.117E-08	2.511E-08	6.663E-08	1.396E-07	1.817E-07	1.089E-07	1.527E-08
Ra-226+D	ΣDSR(j)		4.282E-06	4.278E-06	4.268E-06	4.227E-06	4.073E-06	3.413E-06	1.952E-06	2.736E-07
Ra-226+D	Ra-226+D	1.899E-08	6.158E-08	6.141E-08	6.107E-08	5.988E-08	5.661E-08	4.651E-08	2.653E-08	3.719E-09
Ra-226+D	Pb-210+D2	1.899E-08	1.092E-10	3.212E-10	7.228E-10	1.920E-09	4.024E-09	5.238E-09	3.140E-09	4.402E-10
Ra-226+D	ΣDSR(j)		6.169E-08	6.173E-08	6.179E-08	6.180E-08	6.063E-08	5.175E-08	2.967E-08	4.159E-09
Ra-226+D1	Ra-226+D1	2.100E-04	1.737E-03	1.733E-03	1.723E-03	1.689E-03	1.597E-03	1.312E-03	7.485E-04	1.049E-04
Ra-226+D1	Pb-210+D	2.100E-04	5.949E-07	1.742E-06	3.913E-06	1.038E-05	2.176E-05	2.832E-05	1.698E-05	2.380E-06
Ra-226+D1	Po-210	2.100E-04	3.632E-07	1.732E-06	4.967E-06	1.482E-05	3.215E-05	4.228E-05	2.537E-05	3.556E-06
Ra-226+D1	ΣDSR(j)		1.738E-03	1.736E-03	1.732E-03	1.714E-03	1.651E-03	1.383E-03	7.908E-04	1.109E-04
Ra-226+D1	Ra-226+D1	2.771E-10	2.293E-09	2.287E-09	2.274E-09	2.230E-09	2.108E-09	1.732E-09	9.880E-10	1.385E-10
Ra-226+D1	Pb-210+D1	2.771E-10	8.016E-13	2.347E-12	5.273E-12	1.400E-11	2.933E-11	3.817E-11	2.288E-11	3.208E-12
Ra-226+D1	ΣDSR(j)		2.294E-09	2.289E-09	2.279E-09	2.244E-09	2.137E-09	1.770E-09	1.011E-09	1.417E-10
Ra-226+D1	Ra-226+D1	3.989E-12	3.301E-11	3.292E-11	3.273E-11	3.210E-11	3.034E-11	2.493E-11	1.422E-11	1.993E-12
Ra-226+D1	Pb-210+D2	3.989E-12	2.295E-14	6.747E-14	1.518E-13	4.033E-13	8.452E-13	1.100E-12	6.596E-13	9.247E-14
Ra-226+D1	ΣDSR(j)		3.303E-11	3.299E-11	3.289E-11	3.250E-11	3.119E-11	2.603E-11	1.488E-11	2.086E-12
Ra-226+D2	Ra-226+D2	1.998E-04	5.710E-04	5.694E-04	5.663E-04	5.552E-04	5.249E-04	4.313E-04	2.460E-04	3.448E-05
Ra-226+D2	Pb-210+D	1.998E-04	5.660E-07	1.657E-06	3.722E-06	9.879E-06	2.070E-05	2.694E-05	1.615E-05	2.265E-06
Ra-226+D2	Po-210	1.998E-04	3.456E-07	1.648E-06	4.726E-06	1.410E-05	3.058E-05	4.022E-05	2.413E-05	3.383E-06
Ra-226+D2	ΣDSR(j)		5.720E-04	5.727E-04	5.747E-04	5.792E-04	5.762E-04	4.984E-04	2.863E-04	4.013E-05
Ra-226+D2	Ra-226+D2	2.637E-10	7.538E-10	7.517E-10	7.475E-10	7.329E-10	6.929E-10	5.693E-10	3.247E-10	4.552E-11
Ra-226+D2	Pb-210+D1	2.637E-10	7.626E-13	2.233E-12	5.017E-12	1.332E-11	2.790E-11	3.632E-11	2.177E-11	3.052E-12
Ra-226+D2	ΣDSR(j)		7.545E-10	7.539E-10	7.525E-10	7.462E-10	7.208E-10	6.056E-10	3.465E-10	4.857E-11

Summary : Residential (Town)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D2	Ra-226+D2	3.795E-12	1.085E-11	1.082E-11	1.076E-11	1.055E-11	9.974E-12	8.194E-12	4.674E-12	6.552E-13	
Ra-226+D2	Pb-210+D2	3.795E-12	2.183E-14	6.420E-14	1.445E-13	3.837E-13	8.041E-13	1.047E-12	6.275E-13	8.798E-14	
Ra-226+D2	ΣDSR (j)		1.087E-11	1.088E-11	1.090E-11	1.093E-11	1.078E-11	9.241E-12	5.302E-12	7.432E-13	
Ra-226+D3	Ra-226+D3	4.196E-08	3.311E-07	3.302E-07	3.283E-07	3.219E-07	3.044E-07	2.501E-07	1.426E-07	1.999E-08	
Ra-226+D3	Pb-210+D	4.196E-08	1.189E-10	3.480E-10	7.819E-10	2.075E-09	4.348E-09	5.659E-09	3.393E-09	4.757E-10	
Ra-226+D3	Po-210	4.196E-08	7.258E-11	3.461E-10	9.926E-10	2.961E-09	6.424E-09	8.448E-09	5.069E-09	7.107E-10	
Ra-226+D3	ΣDSR (j)		3.313E-07	3.309E-07	3.301E-07	3.270E-07	3.151E-07	2.642E-07	1.511E-07	2.118E-08	
Ra-226+D3	Ra-226+D3	5.538E-14	4.370E-13	4.358E-13	4.334E-13	4.249E-13	4.017E-13	3.301E-13	1.883E-13	2.639E-14	
Ra-226+D3	Pb-210+D1	5.538E-14	1.602E-16	4.691E-16	1.054E-15	2.797E-15	5.860E-15	7.628E-15	4.573E-15	6.411E-16	
Ra-226+D3	ΣDSR (j)		4.372E-13	4.363E-13	4.344E-13	4.277E-13	4.076E-13	3.377E-13	1.929E-13	2.703E-14	
Ra-226+D3	Ra-226+D3	7.972E-16	6.291E-15	6.273E-15	6.238E-15	6.117E-15	5.783E-15	4.751E-15	2.710E-15	3.799E-16	
Ra-226+D3	Pb-210+D2	7.972E-16	4.586E-18	1.348E-17	3.034E-17	8.059E-17	1.689E-16	2.199E-16	1.318E-16	1.848E-17	
Ra-226+D3	ΣDSR (j)		6.295E-15	6.287E-15	6.268E-15	6.197E-15	5.952E-15	4.971E-15	2.842E-15	3.984E-16	
Ra-226+D4	Ra-226+D4	2.000E-07	2.270E-08	2.264E-08	2.251E-08	2.208E-08	2.087E-08	1.715E-08	9.781E-09	1.371E-09	
Ra-226+D4	Pb-210+D	2.000E-07	5.667E-10	1.659E-09	3.727E-09	9.891E-09	2.073E-08	2.698E-08	1.617E-08	2.267E-09	
Ra-226+D4	Po-210	2.000E-07	3.460E-10	1.650E-09	4.732E-09	1.411E-08	3.062E-08	4.027E-08	2.416E-08	3.388E-09	
Ra-226+D4	ΣDSR (j)		2.362E-08	2.595E-08	3.097E-08	4.608E-08	7.222E-08	8.439E-08	5.012E-08	7.026E-09	
Ra-226+D4	Ra-226+D4	2.640E-13	2.997E-14	2.988E-14	2.972E-14	2.914E-14	2.755E-14	2.263E-14	1.291E-14	1.810E-15	
Ra-226+D4	Pb-210+D1	2.640E-13	7.636E-16	2.236E-15	5.023E-15	1.333E-14	2.793E-14	3.636E-14	2.180E-14	3.056E-15	
Ra-226+D4	ΣDSR (j)		3.073E-14	3.212E-14	3.474E-14	4.247E-14	5.548E-14	5.899E-14	3.471E-14	4.866E-15	
Ra-226+D4	Ra-226+D4	3.800E-15	4.314E-16	4.302E-16	4.278E-16	4.194E-16	3.965E-16	3.258E-16	1.858E-16	2.605E-17	
Ra-226+D4	Pb-210+D2	3.800E-15	2.186E-17	6.427E-17	1.446E-16	3.842E-16	8.051E-16	1.048E-15	6.283E-16	8.809E-17	
Ra-226+D4	ΣDSR (j)		4.532E-16	4.944E-16	5.724E-16	8.036E-16	1.202E-15	1.374E-15	8.141E-16	1.141E-16	
Th-230	Th-230	9.996E-01	5.276E-02	5.276E-02	5.276E-02	5.276E-02	5.274E-02	5.270E-02	5.257E-02	5.213E-02	
Th-230	Ra-226+D	9.996E-01	7.021E-04	2.104E-03	4.897E-03	1.455E-02	4.109E-02	1.231E-01	2.849E-01	4.668E-01	
Th-230	Pb-210+D	9.996E-01	4.137E-07	2.832E-06	1.455E-05	1.197E-04	8.124E-04	4.742E-03	1.402E-02	2.458E-02	
Th-230	Po-210	9.996E-01	2.032E-07	2.262E-06	1.609E-05	1.619E-04	1.176E-03	7.027E-03	2.089E-02	3.666E-02	
Th-230	ΣDSR (j)		5.346E-02	5.487E-02	5.769E-02	6.758E-02	9.582E-02	1.875E-01	3.723E-01	5.801E-01	
Th-230	Th-230	1.319E-06	6.965E-08	6.964E-08	6.964E-08	6.964E-08	6.962E-08	6.956E-08	6.940E-08	6.882E-08	
Th-230	Ra-226+D	1.319E-06	9.268E-10	2.778E-09	6.464E-09	1.920E-08	5.424E-08	1.624E-07	3.760E-07	6.161E-07	
Th-230	Pb-210+D1	1.319E-06	5.408E-13	3.763E-12	1.948E-11	1.610E-10	1.094E-09	6.388E-09	1.889E-08	3.311E-08	
Th-230	ΣDSR (j)		7.057E-08	7.243E-08	7.613E-08	8.900E-08	1.250E-07	2.384E-07	4.643E-07	7.180E-07	
Th-230	Th-230	1.899E-08	1.002E-09	1.002E-09	1.002E-09	1.002E-09	1.002E-09	1.001E-09	9.989E-10	9.905E-10	
Th-230	Ra-226+D	1.899E-08	1.334E-11	3.998E-11	9.304E-11	2.764E-10	7.808E-10	2.338E-09	5.412E-09	8.868E-09	
Th-230	Pb-210+D2	1.899E-08	1.565E-14	1.087E-13	5.620E-13	4.643E-12	3.154E-11	1.842E-10	5.447E-10	9.546E-10	
Th-230	ΣDSR (j)		1.016E-09	1.043E-09	1.096E-09	1.283E-09	1.814E-09	3.524E-09	6.956E-09	1.081E-08	

Summary : Residential (Town)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.100E-04	1.108E-05	1.108E-05	1.108E-05	1.108E-05	1.108E-05	1.107E-05	1.104E-05	1.095E-05
Th-230	Ra-226+D1	2.100E-04	3.764E-07	1.128E-06	2.625E-06	7.798E-06	2.203E-05	6.596E-05	1.527E-04	2.502E-04
Th-230	Pb-210+D	2.100E-04	8.689E-11	5.948E-10	3.055E-09	2.515E-08	1.706E-07	9.960E-07	2.946E-06	5.162E-06
Th-230	Po-210	2.100E-04	4.269E-11	4.752E-10	3.379E-09	3.400E-08	2.469E-07	1.476E-06	4.388E-06	7.700E-06
Th-230	ΣDSR(j)		1.146E-05	1.221E-05	1.371E-05	1.894E-05	3.352E-05	7.950E-05	1.711E-04	2.740E-04
Th-230	Th-230	2.771E-10	1.463E-11	1.463E-11	1.463E-11	1.463E-11	1.462E-11	1.461E-11	1.458E-11	1.445E-11
Th-230	Ra-226+D1	2.771E-10	4.969E-13	1.489E-12	3.465E-12	1.029E-11	2.908E-11	8.707E-11	2.015E-10	3.303E-10
Th-230	Pb-210+D1	2.771E-10	1.136E-16	7.905E-16	4.092E-15	3.382E-14	2.298E-13	1.342E-12	3.969E-12	6.955E-12
Th-230	ΣDSR(j)		1.513E-11	1.612E-11	1.810E-11	2.495E-11	4.393E-11	1.030E-10	2.201E-10	3.517E-10
Th-230	Th-230	3.989E-12	2.106E-13	2.106E-13	2.106E-13	2.105E-13	2.105E-13	2.103E-13	2.098E-13	2.081E-13
Th-230	Ra-226+D1	3.989E-12	7.152E-15	2.143E-14	4.987E-14	1.482E-13	4.185E-13	1.253E-12	2.901E-12	4.754E-12
Th-230	Pb-210+D2	3.989E-12	3.287E-18	2.283E-17	1.181E-16	9.751E-16	6.624E-15	3.869E-14	1.144E-13	2.005E-13
Th-230	ΣDSR(j)		2.177E-13	2.320E-13	2.605E-13	3.597E-13	6.356E-13	1.502E-12	3.225E-12	5.162E-12
Th-230	Th-230	1.998E-04	1.054E-05	1.054E-05	1.054E-05	1.054E-05	1.054E-05	1.053E-05	1.051E-05	1.042E-05
Th-230	Ra-226+D2	1.998E-04	1.237E-07	3.707E-07	8.627E-07	2.563E-06	7.240E-06	2.168E-05	5.019E-05	8.223E-05
Th-230	Pb-210+D	1.998E-04	8.267E-11	5.659E-10	2.907E-09	2.393E-08	1.623E-07	9.477E-07	2.803E-06	4.911E-06
Th-230	Po-210	1.998E-04	4.062E-11	4.521E-10	3.215E-09	3.235E-08	2.349E-07	1.404E-06	4.175E-06	7.326E-06
Th-230	ΣDSR(j)		1.067E-05	1.092E-05	1.141E-05	1.316E-05	1.818E-05	3.456E-05	6.767E-05	1.049E-04
Th-230	Th-230	2.637E-10	1.392E-11	1.392E-11	1.392E-11	1.392E-11	1.391E-11	1.390E-11	1.387E-11	1.375E-11
Th-230	Ra-226+D2	2.637E-10	1.633E-13	4.893E-13	1.139E-12	3.383E-12	9.557E-12	2.862E-11	6.624E-11	1.085E-10
Th-230	Pb-210+D1	2.637E-10	1.081E-16	7.521E-16	3.893E-15	3.217E-14	2.186E-13	1.277E-12	3.776E-12	6.617E-12
Th-230	ΣDSR(j)		1.408E-11	1.441E-11	1.506E-11	1.733E-11	2.369E-11	4.380E-11	8.389E-11	1.289E-10
Th-230	Th-230	3.795E-12	2.003E-13	2.003E-13	2.003E-13	2.003E-13	2.003E-13	2.001E-13	1.996E-13	1.979E-13
Th-230	Ra-226+D2	3.795E-12	2.350E-15	7.044E-15	1.639E-14	4.870E-14	1.376E-13	4.119E-13	9.535E-13	1.562E-12
Th-230	Pb-210+D2	3.795E-12	3.128E-18	2.172E-17	1.123E-16	9.278E-16	6.302E-15	3.681E-14	1.089E-13	1.908E-13
Th-230	ΣDSR(j)		2.027E-13	2.074E-13	2.168E-13	2.499E-13	3.441E-13	6.488E-13	1.262E-12	1.951E-12
Th-230	Th-230	4.196E-08	2.215E-09	2.215E-09	2.215E-09	2.214E-09	2.214E-09	2.212E-09	2.207E-09	2.188E-09
Th-230	Ra-226+D3	4.196E-08	7.174E-11	2.150E-10	5.002E-10	1.486E-09	4.198E-09	1.257E-08	2.910E-08	4.768E-08
Th-230	Pb-210+D	4.196E-08	1.736E-14	1.189E-13	6.106E-13	5.026E-12	3.410E-11	1.990E-10	5.887E-10	1.032E-09
Th-230	Po-210	4.196E-08	8.531E-15	9.497E-14	6.753E-13	6.795E-12	4.935E-11	2.949E-10	8.770E-10	1.539E-09
Th-230	ΣDSR(j)		2.286E-09	2.430E-09	2.716E-09	3.712E-09	6.495E-09	1.528E-08	3.277E-08	5.244E-08
Th-230	Th-230	5.538E-14	2.923E-15	2.923E-15	2.923E-15	2.923E-15	2.922E-15	2.920E-15	2.913E-15	2.889E-15
Th-230	Ra-226+D3	5.538E-14	9.469E-17	2.838E-16	6.603E-16	1.962E-15	5.541E-15	1.659E-14	3.841E-14	6.294E-14
Th-230	Pb-210+D1	5.538E-14	2.270E-20	1.580E-19	8.177E-19	6.758E-18	4.592E-17	2.682E-16	7.931E-16	1.390E-15
Th-230	ΣDSR(j)		3.018E-15	3.207E-15	3.584E-15	4.891E-15	8.509E-15	1.978E-14	4.211E-14	6.721E-14
Th-230	Th-230	7.972E-16	4.208E-17	4.208E-17	4.208E-17	4.207E-17	4.206E-17	4.203E-17	4.193E-17	4.158E-17
Th-230	Ra-226+D3	7.972E-16	1.363E-18	4.084E-18	9.504E-18	2.823E-17	7.976E-17	2.388E-16	5.529E-16	9.059E-16
Th-230	Pb-210+D2	7.972E-16	6.570E-22	4.562E-21	2.359E-20	1.949E-19	1.324E-18	7.731E-18	2.286E-17	4.007E-17
Th-230	ΣDSR(j)		4.344E-17	4.617E-17	5.161E-17	7.050E-17	1.231E-16	2.886E-16	6.176E-16	9.875E-16

Summary : Residential (Town)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.000E-07	1.056E-08	1.056E-08	1.056E-08	1.056E-08	1.055E-08	1.054E-08	1.052E-08	1.043E-08
Th-230	Ra-226+D4	2.000E-07	4.861E-12	1.467E-11	3.423E-11	1.018E-10	2.878E-10	8.619E-10	1.995E-09	3.269E-09
Th-230	Pb-210+D	2.000E-07	8.277E-14	5.666E-13	2.911E-12	2.396E-11	1.625E-10	9.488E-10	2.806E-09	4.917E-09
Th-230	Po-210	2.000E-07	4.067E-14	4.527E-13	3.219E-12	3.239E-11	2.352E-10	1.406E-09	4.180E-09	7.335E-09
Th-230	ΣDSR(j)		1.056E-08	1.057E-08	1.060E-08	1.071E-08	1.124E-08	1.376E-08	1.950E-08	2.595E-08
Th-230	Th-230	2.640E-13	1.393E-14	1.393E-14	1.393E-14	1.393E-14	1.393E-14	1.392E-14	1.388E-14	1.377E-14
Th-230	Ra-226+D4	2.640E-13	6.417E-18	1.937E-17	4.519E-17	1.344E-16	3.799E-16	1.138E-15	2.634E-15	4.316E-15
Th-230	Pb-210+D1	2.640E-13	1.082E-19	7.530E-19	3.898E-18	3.221E-17	2.189E-16	1.278E-15	3.781E-15	6.625E-15
Th-230	ΣDSR(j)		1.394E-14	1.395E-14	1.398E-14	1.410E-14	1.453E-14	1.633E-14	2.030E-14	2.471E-14
Th-230	Th-230	3.800E-15	2.006E-16	2.006E-16	2.006E-16	2.006E-16	2.005E-16	2.003E-16	1.999E-16	1.982E-16
Th-230	Ra-226+D4	3.800E-15	9.237E-20	2.788E-19	6.504E-19	1.935E-18	5.468E-18	1.638E-17	3.791E-17	6.212E-17
Th-230	Pb-210+D2	3.800E-15	3.132E-21	2.175E-20	1.125E-19	9.289E-19	6.310E-18	3.685E-17	1.090E-16	1.910E-16
Th-230	ΣDSR(j)		2.007E-16	2.009E-16	2.013E-16	2.034E-16	2.123E-16	2.536E-16	3.468E-16	4.513E-16
U-234	U-234	9.996E-01	1.184E-02	1.180E-02	1.172E-02	1.145E-02	1.072E-02	8.493E-03	4.370E-03	4.272E-04
U-234	Th-230	9.996E-01	2.425E-07	7.261E-07	1.688E-06	5.006E-06	1.407E-05	4.143E-05	9.203E-05	1.396E-04
U-234	Ra-226+D	9.996E-01	2.150E-09	1.503E-08	7.915E-08	6.981E-07	5.652E-06	5.330E-05	3.235E-04	1.113E-03
U-234	Pb-210+D	9.996E-01	9.583E-13	1.405E-11	1.597E-10	3.946E-09	8.041E-08	1.665E-06	1.469E-05	5.789E-05
U-234	Po-210	9.996E-01	3.952E-13	9.526E-12	1.573E-10	5.081E-09	1.142E-07	2.453E-06	2.185E-05	8.633E-05
U-234	ΣDSR(j)		1.184E-02	1.180E-02	1.172E-02	1.146E-02	1.074E-02	8.592E-03	4.822E-03	1.823E-03
U-234	U-234	1.319E-06	1.563E-08	1.558E-08	1.547E-08	1.512E-08	1.415E-08	1.121E-08	5.769E-09	5.639E-10
U-234	Th-230	1.319E-06	3.201E-13	9.584E-13	2.229E-12	6.608E-12	1.857E-11	5.469E-11	1.215E-10	1.842E-10
U-234	Ra-226+D	1.319E-06	2.838E-15	1.984E-14	1.045E-13	9.215E-13	7.460E-12	7.036E-11	4.270E-10	1.469E-09
U-234	Pb-210+D1	1.319E-06	1.241E-18	1.857E-17	2.132E-16	5.300E-15	1.082E-13	2.243E-12	1.979E-11	7.799E-11
U-234	ΣDSR(j)		1.563E-08	1.558E-08	1.548E-08	1.512E-08	1.417E-08	1.134E-08	6.337E-09	2.295E-09
U-234	U-234	1.899E-08	2.249E-10	2.242E-10	2.227E-10	2.176E-10	2.036E-10	1.614E-10	8.304E-11	8.117E-12
U-234	Th-230	1.899E-08	4.607E-15	1.380E-14	3.208E-14	9.512E-14	2.673E-13	7.871E-13	1.749E-12	2.651E-12
U-234	Ra-226+D	1.899E-08	4.085E-17	2.856E-16	1.504E-15	1.326E-14	1.074E-13	1.013E-12	6.146E-12	2.114E-11
U-234	Pb-210+D2	1.899E-08	3.597E-20	5.366E-19	6.153E-18	1.529E-16	3.121E-15	6.466E-14	5.707E-13	2.248E-12
U-234	ΣDSR(j)		2.249E-10	2.242E-10	2.227E-10	2.177E-10	2.040E-10	1.632E-10	9.150E-11	3.415E-11
U-234	U-234	2.100E-04	2.487E-06	2.478E-06	2.462E-06	2.405E-06	2.251E-06	1.784E-06	9.180E-07	8.973E-08
U-234	Th-230	2.100E-04	5.093E-11	1.525E-10	3.546E-10	1.052E-09	2.955E-09	8.702E-09	1.933E-08	2.931E-08
U-234	Ra-226+D1	2.100E-04	1.153E-12	8.058E-12	4.243E-11	3.742E-10	3.030E-09	2.857E-08	1.734E-07	5.963E-07
U-234	Pb-210+D	2.100E-04	2.013E-16	2.951E-15	3.354E-14	8.288E-13	1.689E-11	3.497E-10	3.086E-09	1.216E-08
U-234	Po-210	2.100E-04	8.302E-17	2.001E-15	3.305E-14	1.067E-12	2.400E-11	5.152E-10	4.590E-09	1.813E-08
U-234	ΣDSR(j)		2.487E-06	2.479E-06	2.462E-06	2.407E-06	2.257E-06	1.822E-06	1.118E-06	7.457E-07
U-234	U-234	2.771E-10	3.283E-12	3.272E-12	3.250E-12	3.175E-12	2.971E-12	2.355E-12	1.212E-12	1.184E-13
U-234	Th-230	2.771E-10	6.723E-17	2.013E-16	4.681E-16	1.388E-15	3.901E-15	1.149E-14	2.552E-14	3.869E-14
U-234	Ra-226+D1	2.771E-10	1.522E-18	1.064E-17	5.601E-17	4.940E-16	3.999E-15	3.771E-14	2.289E-13	7.872E-13
U-234	Pb-210+D1	2.771E-10	2.608E-22	3.900E-21	4.478E-20	1.113E-18	2.273E-17	4.711E-16	4.158E-15	1.638E-14
U-234	ΣDSR(j)		3.283E-12	3.272E-12	3.250E-12	3.177E-12	2.979E-12	2.404E-12	1.470E-12	9.607E-13

Summary : Residential (Town)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	3.989E-12	4.725E-14	4.709E-14	4.678E-14	4.570E-14	4.277E-14	3.389E-14	1.744E-14	1.705E-15
U-234	Th-230	3.989E-12	9.678E-19	2.898E-18	6.738E-18	1.998E-17	5.615E-17	1.653E-16	3.673E-16	5.569E-16
U-234	Ra-226+D1	3.989E-12	2.191E-20	1.531E-19	8.061E-19	7.110E-18	5.756E-17	5.428E-16	3.294E-15	1.133E-14
U-234	Pb-210+D2	3.989E-12	7.556E-24	1.127E-22	1.292E-21	3.211E-20	6.555E-19	1.358E-17	1.199E-16	4.723E-16
U-234	ΣDSR(j)		4.725E-14	4.709E-14	4.679E-14	4.573E-14	4.288E-14	3.462E-14	2.122E-14	1.406E-14
U-234	U-234	1.998E-04	2.366E-06	2.358E-06	2.342E-06	2.289E-06	2.142E-06	1.697E-06	8.734E-07	8.537E-08
U-234	Th-230	1.998E-04	4.846E-11	1.451E-10	3.374E-10	1.000E-09	2.812E-09	8.279E-09	1.839E-08	2.789E-08
U-234	Ra-226+D2	1.998E-04	3.788E-13	2.648E-12	1.394E-11	1.230E-10	9.957E-10	9.390E-09	5.699E-08	1.960E-07
U-234	Pb-210+D	1.998E-04	1.915E-16	2.808E-15	3.191E-14	7.885E-13	1.607E-11	3.327E-10	2.936E-09	1.157E-08
U-234	Po-210	1.998E-04	7.898E-17	1.904E-15	3.144E-14	1.015E-12	2.283E-11	4.902E-10	4.367E-09	1.725E-08
U-234	ΣDSR(j)		2.366E-06	2.358E-06	2.343E-06	2.290E-06	2.145E-06	1.716E-06	9.560E-07	3.381E-07
U-234	U-234	2.637E-10	3.123E-12	3.113E-12	3.092E-12	3.021E-12	2.827E-12	2.240E-12	1.153E-12	1.127E-13
U-234	Th-230	2.637E-10	6.397E-17	1.915E-16	4.454E-16	1.321E-15	3.712E-15	1.093E-14	2.428E-14	3.681E-14
U-234	Ra-226+D2	2.637E-10	5.000E-19	3.495E-18	1.841E-17	1.623E-16	1.314E-15	1.240E-14	7.523E-14	2.587E-13
U-234	Pb-210+D1	2.637E-10	2.481E-22	3.710E-21	4.261E-20	1.059E-18	2.163E-17	4.482E-16	3.956E-15	1.559E-14
U-234	ΣDSR(j)		3.123E-12	3.113E-12	3.093E-12	3.022E-12	2.832E-12	2.264E-12	1.256E-12	4.238E-13
U-234	U-234	3.795E-12	4.495E-14	4.480E-14	4.451E-14	4.348E-14	4.069E-14	3.225E-14	1.659E-14	1.622E-15
U-234	Th-230	3.795E-12	9.207E-19	2.757E-18	6.411E-18	1.901E-17	5.342E-17	1.573E-16	3.494E-16	5.299E-16
U-234	Ra-226+D2	3.795E-12	7.197E-21	5.031E-20	2.649E-19	2.337E-18	1.892E-17	1.784E-16	1.083E-15	3.724E-15
U-234	Pb-210+D2	3.795E-12	7.189E-24	1.072E-22	1.230E-21	3.055E-20	6.236E-19	1.292E-17	1.140E-16	4.493E-16
U-234	ΣDSR(j)		4.495E-14	4.481E-14	4.451E-14	4.351E-14	4.076E-14	3.260E-14	1.814E-14	6.325E-15
U-234	U-234	4.196E-08	4.970E-10	4.953E-10	4.920E-10	4.807E-10	4.498E-10	3.565E-10	1.834E-10	1.793E-11
U-234	Th-230	4.196E-08	1.018E-14	3.048E-14	7.087E-14	2.101E-13	5.906E-13	1.739E-12	3.863E-12	5.858E-12
U-234	Ra-226+D3	4.196E-08	2.197E-16	1.536E-15	8.085E-15	7.131E-14	5.773E-13	5.445E-12	3.304E-11	1.136E-10
U-234	Pb-210+D	4.196E-08	4.022E-20	5.898E-19	6.702E-18	1.656E-16	3.375E-15	6.989E-14	6.167E-13	2.430E-12
U-234	Po-210	4.196E-08	1.659E-20	3.999E-19	6.604E-18	2.133E-16	4.796E-15	1.030E-13	9.173E-13	3.624E-12
U-234	ΣDSR(j)		4.970E-10	4.953E-10	4.921E-10	4.810E-10	4.510E-10	3.638E-10	2.219E-10	1.435E-10
U-234	U-234	5.538E-14	6.560E-16	6.538E-16	6.495E-16	6.345E-16	5.938E-16	4.706E-16	2.421E-16	2.367E-17
U-234	Th-230	5.538E-14	1.344E-20	4.023E-20	9.355E-20	2.774E-19	7.796E-19	2.295E-18	5.099E-18	7.732E-18
U-234	Ra-226+D3	5.538E-14	2.900E-22	2.027E-21	1.067E-20	9.413E-20	7.621E-19	7.187E-18	4.362E-17	1.500E-16
U-234	Pb-210+D1	5.538E-14	5.211E-26	7.793E-25	8.949E-24	2.225E-22	4.543E-21	9.414E-20	8.309E-19	3.274E-18
U-234	ΣDSR(j)		6.560E-16	6.538E-16	6.496E-16	6.349E-16	5.953E-16	4.801E-16	2.917E-16	1.847E-16
U-234	U-234	7.972E-16	9.442E-18	9.411E-18	9.348E-18	9.134E-18	8.546E-18	6.773E-18	3.485E-18	3.407E-19
U-234	Th-230	7.972E-16	1.934E-22	5.791E-22	1.347E-21	3.993E-21	1.122E-20	3.304E-20	7.340E-20	1.113E-19
U-234	Ra-226+D3	7.972E-16	4.175E-24	2.918E-23	1.536E-22	1.355E-21	1.097E-20	1.034E-19	6.278E-19	2.159E-18
U-234	Pb-210+D2	7.972E-16	1.510E-27	2.252E-26	2.583E-25	6.416E-24	1.310E-22	2.714E-21	2.395E-20	9.438E-20
U-234	ΣDSR(j)		9.442E-18	9.411E-18	9.350E-18	9.139E-18	8.569E-18	6.912E-18	4.211E-18	2.706E-18

Summary : Residential (Town)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.000E-07	2.369E-09	2.361E-09	2.345E-09	2.291E-09	2.144E-09	1.699E-09	8.744E-10	8.547E-11
U-234	Th-230	2.000E-07	4.852E-14	1.453E-13	3.378E-13	1.002E-12	2.815E-12	8.289E-12	1.841E-11	2.792E-11
U-234	Ra-226+D4	2.000E-07	1.477E-17	1.044E-16	5.522E-16	4.883E-15	3.957E-14	3.733E-13	2.266E-12	7.793E-12
U-234	Pb-210+D	2.000E-07	1.917E-19	2.811E-18	3.195E-17	7.895E-16	1.609E-14	3.331E-13	2.940E-12	1.158E-11
U-234	Po-210	2.000E-07	7.908E-20	1.906E-18	3.148E-17	1.017E-15	2.286E-14	4.908E-13	4.372E-12	1.727E-11
U-234	ΣDSR(j)		2.369E-09	2.361E-09	2.346E-09	2.292E-09	2.147E-09	1.709E-09	9.024E-10	1.500E-10
U-234	U-234	2.640E-13	3.127E-15	3.116E-15	3.096E-15	3.025E-15	2.830E-15	2.243E-15	1.154E-15	1.128E-16
U-234	Th-230	2.640E-13	6.404E-20	1.918E-19	4.459E-19	1.322E-18	3.716E-18	1.094E-17	2.431E-17	3.686E-17
U-234	Ra-226+D4	2.640E-13	1.949E-23	1.378E-22	7.289E-22	6.446E-21	5.223E-20	4.927E-19	2.991E-18	1.029E-17
U-234	Pb-210+D1	2.640E-13	2.484E-25	3.715E-24	4.266E-23	1.061E-21	2.166E-20	4.487E-19	3.960E-18	1.561E-17
U-234	ΣDSR(j)		3.127E-15	3.117E-15	3.096E-15	3.026E-15	2.834E-15	2.255E-15	1.185E-15	1.756E-16
U-234	U-234	3.800E-15	4.501E-17	4.486E-17	4.456E-17	4.354E-17	4.074E-17	3.229E-17	1.661E-17	1.624E-18
U-234	Th-230	3.800E-15	9.219E-22	2.760E-21	6.418E-21	1.903E-20	5.349E-20	1.575E-19	3.499E-19	5.305E-19
U-234	Ra-226+D4	3.800E-15	2.806E-25	1.983E-24	1.049E-23	9.279E-23	7.518E-22	7.093E-21	4.305E-20	1.481E-19
U-234	Pb-210+D2	3.800E-15	7.198E-27	1.074E-25	1.231E-24	3.058E-23	6.244E-22	1.294E-20	1.142E-19	4.499E-19
U-234	ΣDSR(j)		4.501E-17	4.486E-17	4.457E-17	4.356E-17	4.079E-17	3.246E-17	1.712E-17	2.752E-18
U-238	U-238	5.450E-07	5.782E-09	5.763E-09	5.725E-09	5.594E-09	5.234E-09	4.149E-09	2.136E-09	2.092E-10
U-238+D	U-238+D	1.599E-03	4.040E-03	4.027E-03	4.000E-03	3.908E-03	3.657E-03	2.899E-03	1.493E-03	1.462E-04
U-238+D	U-234	1.599E-03	2.673E-11	7.994E-11	1.853E-10	5.432E-10	1.477E-09	3.856E-09	5.935E-09	1.933E-09
U-238+D	Th-230	1.599E-03	3.651E-16	2.549E-15	1.341E-14	1.181E-13	9.531E-13	8.885E-12	5.229E-11	1.667E-10
U-238+D	Ra-226+D	1.599E-03	2.427E-18	3.635E-17	4.222E-16	1.102E-14	2.571E-13	7.807E-12	1.321E-10	1.138E-09
U-238+D	Pb-210+D	1.599E-03	8.715E-22	2.639E-20	6.480E-19	4.754E-17	2.868E-15	2.055E-13	5.538E-12	5.820E-11
U-238+D	Po-210	1.599E-03	3.102E-22	1.566E-20	5.774E-19	5.846E-17	4.004E-15	3.010E-13	8.222E-12	8.677E-11
U-238+D	ΣDSR(j)		4.040E-03	4.027E-03	4.000E-03	3.908E-03	3.657E-03	2.899E-03	1.493E-03	1.462E-04
U-238+D	U-238+D	2.111E-09	5.333E-09	5.315E-09	5.280E-09	5.159E-09	4.828E-09	3.827E-09	1.970E-09	1.930E-10
U-238+D	U-234	2.111E-09	3.528E-17	1.055E-16	2.446E-16	7.170E-16	1.949E-15	5.090E-15	7.834E-15	2.552E-15
U-238+D	Th-230	2.111E-09	4.820E-22	3.365E-21	1.771E-20	1.559E-19	1.258E-18	1.173E-17	6.903E-17	2.200E-16
U-238+D	Ra-226+D	2.111E-09	3.204E-24	4.798E-23	5.574E-22	1.454E-20	3.394E-19	1.030E-17	1.744E-16	1.503E-15
U-238+D	Pb-210+D1	2.111E-09	1.120E-27	3.468E-26	8.628E-25	6.380E-23	3.860E-21	2.768E-19	7.461E-18	7.842E-17
U-238+D	ΣDSR(j)		5.333E-09	5.315E-09	5.280E-09	5.159E-09	4.828E-09	3.827E-09	1.970E-09	1.930E-10
U-238+D	U-238+D	3.039E-11	7.676E-11	7.651E-11	7.600E-11	7.426E-11	6.949E-11	5.508E-11	2.836E-11	2.778E-12
U-238+D	U-234	3.039E-11	5.078E-19	1.519E-18	3.521E-18	1.032E-17	2.805E-17	7.327E-17	1.128E-16	3.674E-17
U-238+D	Th-230	3.039E-11	6.938E-24	4.844E-23	2.548E-22	2.245E-21	1.811E-20	1.688E-19	9.935E-19	3.167E-18
U-238+D	Ra-226+D	3.039E-11	4.611E-26	6.906E-25	8.023E-24	2.093E-22	4.885E-21	1.483E-19	2.510E-18	2.163E-17
U-238+D	Pb-210+D2	3.039E-11	3.249E-29	1.003E-27	2.491E-26	1.840E-24	1.113E-22	7.979E-21	2.151E-19	2.261E-18
U-238+D	ΣDSR(j)		7.676E-11	7.651E-11	7.600E-11	7.426E-11	6.949E-11	5.508E-11	2.836E-11	2.778E-12

Summary : Residential (Town)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	3.359E-07	8.486E-07	8.458E-07	8.402E-07	8.209E-07	7.682E-07	6.089E-07	3.135E-07	3.071E-08
U-238+D	U-234	3.359E-07	5.614E-15	1.679E-14	3.893E-14	1.141E-13	3.101E-13	8.100E-13	1.247E-12	4.061E-13
U-238+D	Th-230	3.359E-07	7.669E-20	5.355E-19	2.817E-18	2.481E-17	2.002E-16	1.866E-15	1.098E-14	3.501E-14
U-238+D	Ra-226+D1	3.359E-07	1.302E-21	1.949E-20	2.264E-19	5.906E-18	1.378E-16	4.185E-15	7.083E-14	6.102E-13
U-238+D	Pb-210+D	3.359E-07	1.831E-25	5.543E-24	1.361E-22	9.986E-21	6.025E-19	4.316E-17	1.163E-15	1.222E-14
U-238+D	Po-210	3.359E-07	6.515E-26	3.289E-24	1.213E-22	1.228E-20	8.410E-19	6.323E-17	1.727E-15	1.823E-14
U-238+D	ΣDSR(j)		8.486E-07	8.458E-07	8.402E-07	8.209E-07	7.682E-07	6.089E-07	3.135E-07	3.071E-08
U-238+D	U-238+D	4.434E-13	1.120E-12	1.116E-12	1.109E-12	1.084E-12	1.014E-12	8.038E-13	4.138E-13	4.053E-14
U-238+D	U-234	4.434E-13	7.410E-21	2.217E-20	5.138E-20	1.506E-19	4.094E-19	1.069E-18	1.646E-18	5.361E-19
U-238+D	Th-230	4.434E-13	1.012E-25	7.068E-25	3.719E-24	3.275E-23	2.643E-22	2.463E-21	1.450E-20	4.622E-20
U-238+D	Ra-226+D1	4.434E-13	1.718E-27	2.572E-26	2.988E-25	7.795E-24	1.819E-22	5.524E-21	9.349E-20	8.054E-19
U-238+D	Pb-210+D1	4.434E-13	2.352E-31	7.285E-30	1.812E-28	1.340E-26	8.107E-25	5.813E-23	1.567E-21	1.647E-20
U-238+D	ΣDSR(j)		1.120E-12	1.116E-12	1.109E-12	1.084E-12	1.014E-12	8.038E-13	4.139E-13	4.053E-14
U-238+D	U-238+D	6.383E-15	1.612E-14	1.607E-14	1.596E-14	1.560E-14	1.460E-14	1.157E-14	5.957E-15	5.834E-16
U-238+D	U-234	6.383E-15	1.067E-22	3.190E-22	7.396E-22	2.168E-21	5.893E-21	1.539E-20	2.369E-20	7.716E-21
U-238+D	Th-230	6.383E-15	1.457E-27	1.017E-26	5.353E-26	4.715E-25	3.804E-24	3.546E-23	2.087E-22	6.653E-22
U-238+D	Ra-226+D1	6.383E-15	2.473E-29	3.703E-28	4.301E-27	1.122E-25	2.618E-24	7.951E-23	1.346E-21	1.159E-20
U-238+D	Pb-210+D2	6.383E-15	6.824E-33	2.107E-31	5.232E-30	3.865E-28	2.337E-26	1.676E-24	4.518E-23	4.748E-22
U-238+D	ΣDSR(j)		1.612E-14	1.607E-14	1.596E-14	1.560E-14	1.460E-14	1.157E-14	5.957E-15	5.834E-16
U-238+D	U-238+D	3.196E-07	8.074E-07	8.047E-07	7.994E-07	7.810E-07	7.309E-07	5.793E-07	2.983E-07	2.921E-08
U-238+D	U-234	3.196E-07	5.341E-15	1.598E-14	3.703E-14	1.086E-13	2.951E-13	7.706E-13	1.186E-12	3.864E-13
U-238+D	Th-230	3.196E-07	7.297E-20	5.095E-19	2.680E-18	2.361E-17	1.905E-16	1.776E-15	1.045E-14	3.331E-14
U-238+D	Ra-226+D2	3.196E-07	4.275E-22	6.403E-21	7.439E-20	1.941E-18	4.529E-17	1.375E-15	2.328E-14	2.006E-13
U-238+D	Pb-210+D	3.196E-07	1.742E-25	5.273E-24	1.295E-22	9.501E-21	5.732E-19	4.107E-17	1.107E-15	1.163E-14
U-238+D	Po-210	3.196E-07	6.198E-26	3.129E-24	1.154E-22	1.168E-20	8.001E-19	6.016E-17	1.643E-15	1.734E-14
U-238+D	ΣDSR(j)		8.074E-07	8.047E-07	7.994E-07	7.810E-07	7.309E-07	5.793E-07	2.983E-07	2.922E-08
U-238+D	U-238+D	4.219E-13	1.066E-12	1.062E-12	1.055E-12	1.031E-12	9.647E-13	7.647E-13	3.937E-13	3.856E-14
U-238+D	U-234	4.219E-13	7.050E-21	2.109E-20	4.889E-20	1.433E-19	3.895E-19	1.017E-18	1.566E-18	5.100E-19
U-238+D	Th-230	4.219E-13	9.632E-26	6.725E-25	3.538E-24	3.116E-23	2.514E-22	2.344E-21	1.379E-20	4.397E-20
U-238+D	Ra-226+D2	4.219E-13	5.643E-28	8.452E-27	9.819E-26	2.562E-24	5.979E-23	1.815E-21	3.073E-20	2.647E-19
U-238+D	Pb-210+D1	4.219E-13	2.238E-31	6.931E-30	1.724E-28	1.275E-26	7.713E-25	5.531E-23	1.491E-21	1.567E-20
U-238+D	ΣDSR(j)		1.066E-12	1.062E-12	1.055E-12	1.031E-12	9.647E-13	7.647E-13	3.937E-13	3.856E-14
U-238+D	U-238+D	6.073E-15	1.534E-14	1.529E-14	1.519E-14	1.484E-14	1.389E-14	1.101E-14	5.668E-15	5.551E-16
U-238+D	U-234	6.073E-15	1.015E-22	3.035E-22	7.037E-22	2.063E-21	5.606E-21	1.464E-20	2.254E-20	7.341E-21
U-238+D	Th-230	6.073E-15	1.386E-27	9.680E-27	5.093E-26	4.486E-25	3.619E-24	3.374E-23	1.986E-22	6.330E-22
U-238+D	Ra-226+D2	6.073E-15	8.123E-30	1.217E-28	1.413E-27	3.688E-26	8.606E-25	2.613E-23	4.423E-22	3.810E-21
U-238+D	Pb-210+D2	6.073E-15	6.493E-33	2.005E-31	4.978E-30	3.677E-28	2.224E-26	1.595E-24	4.298E-23	4.518E-22
U-238+D	ΣDSR(j)		1.534E-14	1.529E-14	1.519E-14	1.484E-14	1.389E-14	1.101E-14	5.668E-15	5.551E-16

Summary : Residential (Town)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	6.713E-11	1.696E-10	1.690E-10	1.679E-10	1.641E-10	1.535E-10	1.217E-10	6.265E-11	6.136E-12
U-238+D	U-234	6.713E-11	1.122E-18	3.356E-18	7.779E-18	2.280E-17	6.198E-17	1.619E-16	2.491E-16	8.116E-17
U-238+D	Th-230	6.713E-11	1.533E-23	1.070E-22	5.630E-22	4.959E-21	4.001E-20	3.729E-19	2.195E-18	6.997E-18
U-238+D	Ra-226+D3	6.713E-11	2.480E-25	3.714E-24	4.314E-23	1.125E-21	2.626E-20	7.974E-19	1.350E-17	1.163E-16
U-238+D	Pb-210+D	6.713E-11	3.658E-29	1.108E-27	2.720E-26	1.996E-24	1.204E-22	8.626E-21	2.324E-19	2.443E-18
U-238+D	Po-210	6.713E-11	1.302E-29	6.573E-28	2.424E-26	2.454E-24	1.681E-22	1.264E-20	3.451E-19	3.642E-18
U-238+D	ΣDSR(j)		1.696E-10	1.690E-10	1.679E-10	1.641E-10	1.535E-10	1.217E-10	6.265E-11	6.137E-12
U-238+D	U-238+D	8.862E-17	2.239E-16	2.231E-16	2.216E-16	2.165E-16	2.026E-16	1.606E-16	8.270E-17	8.100E-18
U-238+D	U-234	8.862E-17	1.481E-24	4.429E-24	1.027E-23	3.010E-23	8.181E-23	2.137E-22	3.289E-22	1.071E-22
U-238+D	Th-230	8.862E-17	2.023E-29	1.413E-28	7.432E-28	6.546E-27	5.281E-26	4.923E-25	2.897E-24	9.237E-24
U-238+D	Ra-226+D3	8.862E-17	3.274E-31	4.902E-30	5.694E-29	1.486E-27	3.467E-26	1.053E-24	1.782E-23	1.535E-22
U-238+D	Pb-210+D1	8.862E-17	4.701E-35	1.456E-33	3.622E-32	2.678E-30	1.620E-28	1.162E-26	3.132E-25	3.292E-24
U-238+D	ΣDSR(j)		2.239E-16	2.231E-16	2.216E-16	2.165E-16	2.026E-16	1.606E-16	8.270E-17	8.100E-18
U-238+D	U-238+D	1.276E-18	3.222E-18	3.211E-18	3.190E-18	3.117E-18	2.917E-18	2.312E-18	1.190E-18	1.166E-19
U-238+D	U-234	1.276E-18	2.132E-26	6.376E-26	1.478E-25	4.332E-25	1.178E-24	3.076E-24	4.733E-24	1.542E-24
U-238+D	Th-230	1.276E-18	2.912E-31	2.033E-30	1.070E-29	9.422E-29	7.601E-28	7.086E-27	4.170E-26	1.330E-25
U-238+D	Ra-226+D3	1.276E-18	4.713E-33	7.056E-32	8.196E-31	2.138E-29	4.990E-28	1.515E-26	2.564E-25	2.209E-24
U-238+D	Pb-210+D2	1.276E-18	1.364E-36	4.210E-35	1.046E-33	7.724E-32	4.671E-30	3.349E-28	9.028E-27	9.489E-26
U-238+D	ΣDSR(j)		3.222E-18	3.211E-18	3.190E-18	3.117E-18	2.917E-18	2.312E-18	1.190E-18	1.166E-19
U-238+D	U-238+D	3.200E-10	8.084E-10	8.057E-10	8.004E-10	7.820E-10	7.318E-10	5.800E-10	2.987E-10	2.925E-11
U-238+D	U-234	3.200E-10	5.348E-18	1.600E-17	3.708E-17	1.087E-16	2.954E-16	7.716E-16	1.188E-15	3.869E-16
U-238+D	Th-230	3.200E-10	7.306E-23	5.101E-22	2.684E-21	2.364E-20	1.907E-19	1.778E-18	1.046E-17	3.335E-17
U-238+D	Ra-226+D4	3.200E-10	1.656E-26	2.514E-25	2.941E-24	7.702E-23	1.800E-21	5.467E-20	9.254E-19	7.974E-18
U-238+D	Pb-210+D	3.200E-10	1.744E-28	5.280E-27	1.297E-25	9.512E-24	5.739E-22	4.111E-20	1.108E-18	1.165E-17
U-238+D	Po-210	3.200E-10	6.206E-29	3.133E-27	1.155E-25	1.170E-23	8.011E-22	6.023E-20	1.645E-18	1.736E-17
U-238+D	ΣDSR(j)		8.084E-10	8.057E-10	8.004E-10	7.820E-10	7.318E-10	5.800E-10	2.987E-10	2.925E-11
U-238+D	U-238+D	4.224E-16	1.067E-15	1.064E-15	1.056E-15	1.032E-15	9.659E-16	7.657E-16	3.942E-16	3.861E-17
U-238+D	U-234	4.224E-16	7.059E-24	2.111E-23	4.894E-23	1.435E-22	3.900E-22	1.018E-21	1.568E-21	5.106E-22
U-238+D	Th-230	4.224E-16	9.644E-29	6.733E-28	3.542E-27	3.120E-26	2.517E-25	2.347E-24	1.381E-23	4.403E-23
U-238+D	Ra-226+D4	4.224E-16	2.186E-32	3.319E-31	3.882E-30	1.017E-28	2.375E-27	7.216E-26	1.222E-24	1.053E-23
U-238+D	Pb-210+D1	4.224E-16	2.241E-34	6.939E-33	1.726E-31	1.276E-29	7.722E-28	5.538E-26	1.493E-24	1.569E-23
U-238+D	ΣDSR(j)		1.067E-15	1.064E-15	1.056E-15	1.032E-15	9.659E-16	7.657E-16	3.942E-16	3.861E-17
U-238+D	U-238+D	6.080E-18	1.536E-17	1.531E-17	1.521E-17	1.486E-17	1.390E-17	1.102E-17	5.674E-18	5.558E-19
U-238+D	U-234	6.080E-18	1.016E-25	3.039E-25	7.045E-25	2.065E-24	5.613E-24	1.466E-23	2.256E-23	7.350E-24
U-238+D	Th-230	6.080E-18	1.388E-30	9.691E-30	5.099E-29	4.491E-28	3.623E-27	3.378E-26	1.988E-25	6.337E-25
U-238+D	Ra-226+D4	6.080E-18	3.147E-34	4.777E-33	5.587E-32	1.463E-30	3.419E-29	1.039E-27	1.758E-26	1.515E-25
U-238+D	Pb-210+D2	6.080E-18	6.501E-36	2.007E-34	4.984E-33	3.682E-31	2.227E-29	1.597E-27	4.303E-26	4.523E-25
U-238+D	ΣDSR(j)		1.536E-17	1.531E-17	1.521E-17	1.486E-17	1.390E-17	1.102E-17	5.674E-18	5.558E-19

Summary : Residential (Town)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	9.980E-01	5.614E-02	5.595E-02	5.558E-02	5.431E-02	5.082E-02	4.028E-02	2.074E-02	2.031E-03
U-238+D1	U-234	9.980E-01	1.668E-08	4.988E-08	1.156E-07	3.390E-07	9.214E-07	2.406E-06	3.704E-06	1.206E-06
U-238+D1	Th-230	9.980E-01	2.278E-13	1.591E-12	8.370E-12	7.372E-11	5.947E-10	5.544E-09	3.263E-08	1.040E-07
U-238+D1	Ra-226+D	9.980E-01	1.514E-15	2.268E-14	2.635E-13	6.875E-12	1.604E-10	4.871E-09	8.245E-08	7.103E-07
U-238+D1	Pb-210+D	9.980E-01	5.438E-19	1.647E-17	4.044E-16	2.967E-14	1.790E-12	1.282E-10	3.455E-09	3.632E-08
U-238+D1	Po-210	9.980E-01	1.935E-19	9.771E-18	3.603E-16	3.648E-14	2.498E-12	1.878E-10	5.131E-09	5.414E-08
U-238+D1	ΣDSR(j)		5.614E-02	5.595E-02	5.558E-02	5.431E-02	5.082E-02	4.028E-02	2.074E-02	2.033E-03
U-238+D1	U-238+D1	1.317E-06	7.410E-08	7.386E-08	7.337E-08	7.168E-08	6.708E-08	5.317E-08	2.738E-08	2.681E-09
U-238+D1	U-234	1.317E-06	2.201E-14	6.585E-14	1.526E-13	4.474E-13	1.216E-12	3.176E-12	4.889E-12	1.593E-12
U-238+D1	Th-230	1.317E-06	3.008E-19	2.100E-18	1.105E-17	9.731E-17	7.851E-16	7.318E-15	4.307E-14	1.373E-13
U-238+D1	Ra-226+D	1.317E-06	1.999E-21	2.994E-20	3.478E-19	9.074E-18	2.118E-16	6.430E-15	1.088E-13	9.376E-13
U-238+D1	Pb-210+D1	1.317E-06	6.988E-25	2.164E-23	5.384E-22	3.981E-20	2.408E-18	1.727E-16	4.655E-15	4.893E-14
U-238+D1	ΣDSR(j)		7.410E-08	7.386E-08	7.337E-08	7.168E-08	6.708E-08	5.318E-08	2.738E-08	2.684E-09
U-238+D1	U-238+D1	1.896E-08	1.067E-09	1.063E-09	1.056E-09	1.032E-09	9.655E-10	7.654E-10	3.941E-10	3.859E-11
U-238+D1	U-234	1.896E-08	3.169E-16	9.478E-16	2.197E-15	6.440E-15	1.751E-14	4.572E-14	7.037E-14	2.292E-14
U-238+D1	Th-230	1.896E-08	4.329E-21	3.022E-20	1.590E-19	1.401E-18	1.130E-17	1.053E-16	6.200E-16	1.976E-15
U-238+D1	Ra-226+D	1.896E-08	2.877E-23	4.309E-22	5.006E-21	1.306E-19	3.048E-18	9.256E-17	1.567E-15	1.350E-14
U-238+D1	Pb-210+D2	1.896E-08	2.027E-26	6.259E-25	1.554E-23	1.148E-21	6.944E-20	4.979E-18	1.342E-16	1.411E-15
U-238+D1	ΣDSR(j)		1.067E-09	1.063E-09	1.056E-09	1.032E-09	9.655E-10	7.654E-10	3.941E-10	3.863E-11
U-238+D1	U-238+D1	2.096E-04	1.179E-05	1.175E-05	1.167E-05	1.141E-05	1.067E-05	8.461E-06	4.356E-06	4.267E-07
U-238+D1	U-234	2.096E-04	3.503E-12	1.048E-11	2.429E-11	7.120E-11	1.935E-10	5.054E-10	7.779E-10	2.534E-10
U-238+D1	Th-230	2.096E-04	4.786E-17	3.341E-16	1.758E-15	1.548E-14	1.249E-13	1.165E-12	6.854E-12	2.185E-11
U-238+D1	Ra-226+D1	2.096E-04	8.122E-19	1.216E-17	1.412E-16	3.685E-15	8.599E-14	2.611E-12	4.419E-11	3.808E-10
U-238+D1	Pb-210+D	2.096E-04	1.142E-22	3.459E-21	8.493E-20	6.231E-18	3.760E-16	2.693E-14	7.258E-13	7.628E-12
U-238+D1	Po-210	2.096E-04	4.065E-23	2.052E-21	7.568E-20	7.662E-18	5.248E-16	3.946E-14	1.078E-12	1.137E-11
U-238+D1	ΣDSR(j)		1.179E-05	1.175E-05	1.167E-05	1.141E-05	1.067E-05	8.461E-06	4.357E-06	4.273E-07
U-238+D1	U-238+D1	2.767E-10	1.556E-11	1.551E-11	1.541E-11	1.506E-11	1.409E-11	1.117E-11	5.750E-12	5.632E-13
U-238+D1	U-234	2.767E-10	4.624E-18	1.383E-17	3.206E-17	9.398E-17	2.555E-16	6.672E-16	1.027E-15	3.345E-16
U-238+D1	Th-230	2.767E-10	6.317E-23	4.411E-22	2.321E-21	2.044E-20	1.649E-19	1.537E-18	9.047E-18	2.884E-17
U-238+D1	Ra-226+D1	2.767E-10	1.072E-24	1.605E-23	1.864E-22	4.864E-21	1.135E-19	3.447E-18	5.834E-17	5.026E-16
U-238+D1	Pb-210+D1	2.767E-10	1.468E-28	4.546E-27	1.131E-25	8.362E-24	5.059E-22	3.628E-20	9.778E-19	1.028E-17
U-238+D1	ΣDSR(j)		1.556E-11	1.551E-11	1.541E-11	1.506E-11	1.409E-11	1.117E-11	5.751E-12	5.641E-13
U-238+D1	U-238+D1	3.983E-12	2.240E-13	2.233E-13	2.218E-13	2.167E-13	2.028E-13	1.608E-13	8.277E-14	8.107E-15
U-238+D1	U-234	3.983E-12	6.656E-20	1.991E-19	4.615E-19	1.353E-18	3.677E-18	9.603E-18	1.478E-17	4.815E-18
U-238+D1	Th-230	3.983E-12	9.093E-25	6.349E-24	3.340E-23	2.942E-22	2.374E-21	2.213E-20	1.302E-19	4.151E-19
U-238+D1	Ra-226+D1	3.983E-12	1.543E-26	2.311E-25	2.684E-24	7.002E-23	1.634E-21	4.961E-20	8.397E-19	7.234E-18
U-238+D1	Pb-210+D2	3.983E-12	4.258E-30	1.315E-28	3.265E-27	2.412E-25	1.459E-23	1.046E-21	2.819E-20	2.963E-19
U-238+D1	ΣDSR(j)		2.240E-13	2.233E-13	2.218E-13	2.167E-13	2.028E-13	1.608E-13	8.279E-14	8.119E-15

Summary : Residential (Town)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.994E-04	1.122E-05	1.118E-05	1.111E-05	1.085E-05	1.016E-05	8.050E-06	4.145E-06	4.059E-07
U-238+D1	U-234	1.994E-04	3.333E-12	9.969E-12	2.311E-11	6.774E-11	1.841E-10	4.809E-10	7.401E-10	2.411E-10
U-238+D1	Th-230	1.994E-04	4.553E-17	3.179E-16	1.673E-15	1.473E-14	1.189E-13	1.108E-12	6.521E-12	2.079E-11
U-238+D1	Ra-226+D2	1.994E-04	2.668E-19	3.996E-18	4.642E-17	1.211E-15	2.826E-14	8.582E-13	1.453E-11	1.251E-10
U-238+D1	Pb-210+D	1.994E-04	1.087E-22	3.291E-21	8.081E-20	5.928E-18	3.577E-16	2.562E-14	6.905E-13	7.258E-12
U-238+D1	Po-210	1.994E-04	3.868E-23	1.953E-21	7.201E-20	7.290E-18	4.993E-16	3.754E-14	1.025E-12	1.082E-11
U-238+D1	ΣDSR(j)		1.122E-05	1.118E-05	1.111E-05	1.085E-05	1.016E-05	8.050E-06	4.145E-06	4.063E-07
U-238+D1	U-238+D1	2.633E-10	1.481E-11	1.476E-11	1.466E-11	1.433E-11	1.341E-11	1.063E-11	5.471E-12	5.358E-13
U-238+D1	U-234	2.633E-10	4.399E-18	1.316E-17	3.050E-17	8.942E-17	2.430E-16	6.348E-16	9.769E-16	3.183E-16
U-238+D1	Th-230	2.633E-10	6.010E-23	4.196E-22	2.208E-21	1.945E-20	1.569E-19	1.462E-18	8.607E-18	2.744E-17
U-238+D1	Ra-226+D2	2.633E-10	3.521E-25	5.274E-24	6.127E-23	1.599E-21	3.731E-20	1.133E-18	1.917E-17	1.652E-16
U-238+D1	Pb-210+D1	2.633E-10	1.397E-28	4.325E-27	1.076E-25	7.955E-24	4.813E-22	3.451E-20	9.303E-19	9.779E-18
U-238+D1	ΣDSR(j)		1.481E-11	1.476E-11	1.466E-11	1.433E-11	1.341E-11	1.063E-11	5.472E-12	5.364E-13
U-238+D1	U-238+D1	3.789E-12	2.132E-13	2.124E-13	2.110E-13	2.062E-13	1.930E-13	1.529E-13	7.875E-14	7.713E-15
U-238+D1	U-234	3.789E-12	6.332E-20	1.894E-19	4.391E-19	1.287E-18	3.498E-18	9.137E-18	1.406E-17	4.581E-18
U-238+D1	Th-230	3.789E-12	8.651E-25	6.040E-24	3.178E-23	2.799E-22	2.258E-21	2.105E-20	1.239E-19	3.950E-19
U-238+D1	Ra-226+D2	3.789E-12	5.069E-27	7.592E-26	8.819E-25	2.301E-23	5.370E-22	1.631E-20	2.760E-19	2.378E-18
U-238+D1	Pb-210+D2	3.789E-12	4.052E-30	1.251E-28	3.106E-27	2.295E-25	1.388E-23	9.950E-22	2.682E-20	2.819E-19
U-238+D1	ΣDSR(j)		2.132E-13	2.124E-13	2.110E-13	2.062E-13	1.930E-13	1.530E-13	7.876E-14	7.720E-15
U-238+D1	U-238+D1	4.189E-08	2.356E-09	2.349E-09	2.333E-09	2.279E-09	2.133E-09	1.691E-09	8.706E-10	8.526E-11
U-238+D1	U-234	4.189E-08	7.000E-16	2.094E-15	4.854E-15	1.423E-14	3.867E-14	1.010E-13	1.555E-13	5.064E-14
U-238+D1	Th-230	4.189E-08	9.564E-21	6.677E-20	3.513E-19	3.094E-18	2.496E-17	2.327E-16	1.370E-15	4.366E-15
U-238+D1	Ra-226+D3	4.189E-08	1.548E-22	2.317E-21	2.692E-20	7.023E-19	1.639E-17	4.976E-16	8.422E-15	7.256E-14
U-238+D1	Pb-210+D	4.189E-08	2.283E-26	6.912E-25	1.697E-23	1.245E-21	7.513E-20	5.382E-18	1.450E-16	1.524E-15
U-238+D1	Po-210	4.189E-08	8.124E-27	4.101E-25	1.512E-23	1.531E-21	1.049E-19	7.885E-18	2.154E-16	2.273E-15
U-238+D1	ΣDSR(j)		2.356E-09	2.349E-09	2.333E-09	2.279E-09	2.133E-09	1.691E-09	8.707E-10	8.540E-11
U-238+D1	U-238+D1	5.530E-14	3.110E-15	3.100E-15	3.080E-15	3.009E-15	2.816E-15	2.232E-15	1.149E-15	1.125E-16
U-238+D1	U-234	5.530E-14	9.241E-22	2.764E-21	6.407E-21	1.878E-20	5.105E-20	1.333E-19	2.052E-19	6.685E-20
U-238+D1	Th-230	5.530E-14	1.262E-26	8.814E-26	4.637E-25	4.084E-24	3.295E-23	3.072E-22	1.808E-21	5.764E-21
U-238+D1	Ra-226+D3	5.530E-14	2.043E-28	3.059E-27	3.553E-26	9.270E-25	2.163E-23	6.568E-22	1.112E-20	9.578E-20
U-238+D1	Pb-210+D1	5.530E-14	2.933E-32	9.084E-31	2.260E-29	1.671E-27	1.011E-25	7.249E-24	1.954E-22	2.054E-21
U-238+D1	ΣDSR(j)		3.110E-15	3.100E-15	3.080E-15	3.009E-15	2.816E-15	2.232E-15	1.149E-15	1.127E-16
U-238+D1	U-238+D1	7.959E-16	4.477E-17	4.462E-17	4.433E-17	4.331E-17	4.053E-17	3.213E-17	1.654E-17	1.620E-18
U-238+D1	U-234	7.959E-16	1.330E-23	3.978E-23	9.223E-23	2.703E-22	7.348E-22	1.919E-21	2.954E-21	9.622E-22
U-238+D1	Th-230	7.959E-16	1.817E-28	1.269E-27	6.675E-27	5.879E-26	4.743E-25	4.422E-24	2.602E-23	8.296E-23
U-238+D1	Ra-226+D3	7.959E-16	2.941E-30	4.403E-29	5.114E-28	1.334E-26	3.114E-25	9.454E-24	1.600E-22	1.379E-21
U-238+D1	Pb-210+D2	7.959E-16	8.510E-34	2.627E-32	6.525E-31	4.820E-29	2.915E-27	2.090E-25	5.634E-24	5.921E-23
U-238+D1	ΣDSR(j)		4.477E-17	4.462E-17	4.433E-17	4.331E-17	4.053E-17	3.213E-17	1.654E-17	1.623E-18

Summary : Residential (Town)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.997E-07	1.123E-08	1.119E-08	1.112E-08	1.087E-08	1.017E-08	8.060E-09	4.150E-09	4.064E-10
U-238+D1	U-234	1.997E-07	3.337E-15	9.981E-15	2.314E-14	6.782E-14	1.843E-13	4.815E-13	7.410E-13	2.414E-13
U-238+D1	Th-230	1.997E-07	4.559E-20	3.183E-19	1.675E-18	1.475E-17	1.190E-16	1.109E-15	6.529E-15	2.081E-14
U-238+D1	Ra-226+D4	1.997E-07	1.033E-23	1.569E-22	1.835E-21	4.806E-20	1.123E-18	3.411E-17	5.775E-16	4.976E-15
U-238+D1	Pb-210+D	1.997E-07	1.088E-25	3.295E-24	8.090E-23	5.936E-21	3.581E-19	2.566E-17	6.914E-16	7.267E-15
U-238+D1	Po-210	1.997E-07	3.873E-26	1.955E-24	7.209E-23	7.299E-21	4.999E-19	3.759E-17	1.027E-15	1.083E-14
U-238+D1	ΣDSR(j)		1.123E-08	1.119E-08	1.112E-08	1.087E-08	1.017E-08	8.060E-09	4.150E-09	4.067E-10
U-238+D1	U-238+D1	2.636E-13	1.483E-14	1.478E-14	1.468E-14	1.434E-14	1.342E-14	1.064E-14	5.478E-15	5.365E-16
U-238+D1	U-234	2.636E-13	4.405E-21	1.318E-20	3.054E-20	8.952E-20	2.433E-19	6.355E-19	9.781E-19	3.186E-19
U-238+D1	Th-230	2.636E-13	6.018E-26	4.201E-25	2.211E-24	1.947E-23	1.571E-22	1.464E-21	8.618E-21	2.747E-20
U-238+D1	Ra-226+D4	2.636E-13	1.364E-29	2.071E-28	2.422E-27	6.344E-26	1.482E-24	4.503E-23	7.623E-22	6.568E-21
U-238+D1	Pb-210+D1	2.636E-13	1.398E-31	4.330E-30	1.077E-28	7.965E-27	4.819E-25	3.455E-23	9.315E-22	9.791E-21
U-238+D1	ΣDSR(j)		1.483E-14	1.478E-14	1.468E-14	1.434E-14	1.342E-14	1.064E-14	5.479E-15	5.368E-16
U-238+D1	U-238+D1	3.794E-15	2.134E-16	2.127E-16	2.113E-16	2.064E-16	1.932E-16	1.531E-16	7.885E-17	7.722E-18
U-238+D1	U-234	3.794E-15	6.340E-23	1.896E-22	4.396E-22	1.289E-21	3.503E-21	9.148E-21	1.408E-20	4.587E-21
U-238+D1	Th-230	3.794E-15	8.662E-28	6.047E-27	3.182E-26	2.802E-25	2.261E-24	2.108E-23	1.240E-22	3.954E-22
U-238+D1	Ra-226+D4	3.794E-15	1.964E-31	2.981E-30	3.486E-29	9.131E-28	2.134E-26	6.482E-25	1.097E-23	9.454E-23
U-238+D1	Pb-210+D2	3.794E-15	4.056E-33	1.252E-31	3.110E-30	2.297E-28	1.389E-26	9.962E-25	2.685E-23	2.823E-22
U-238+D1	ΣDSR(j)		2.134E-16	2.127E-16	2.113E-16	2.064E-16	1.932E-16	1.531E-16	7.886E-17	7.727E-18

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Nuclide									
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	3.708E+01	2.895E+01	2.955E+01	3.716E+01	7.173E+01	7.169E+02	5.151E+05	*7.632E+13	
Po-210	9.700E+01	6.142E+02	2.464E+04	1.008E+10	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15	
Ra-226	3.694E+00	3.691E+00	3.682E+00	3.665E+00	3.706E+00	4.307E+00	7.504E+00	5.354E+01	
Th-230	2.244E+02	2.186E+02	2.079E+02	1.775E+02	1.252E+02	6.395E+01	3.221E+01	2.067E+01	
U-234	1.013E+03	1.016E+03	1.023E+03	1.047E+03	1.117E+03	1.396E+03	2.487E+03	6.577E+03	
U-238	1.993E+02	2.000E+02	2.013E+02	2.061E+02	2.202E+02	2.778E+02	5.394E+02	5.503E+03	

*At specific activity limit

Summary : Residential (Town)

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Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Pb-210	1.000E+00	1.516 ± 0.003	4.192E-01	2.862E+01	3.236E-01	3.708E+01
Po-210	1.000E+00	0.000E+00	1.237E-01	9.700E+01	1.237E-01	9.700E+01
Ra-226	1.000E+00	12.83 ± 0.03	3.275E+00	3.664E+00	3.248E+00	3.694E+00
Th-230	1.000E+00	1.000E+03	5.805E-01	2.067E+01	5.349E-02	2.244E+02
U-234	1.000E+00	0.000E+00	1.184E-02	1.013E+03	1.184E-02	1.013E+03
U-238	1.000E+00	0.000E+00	6.020E-02	1.993E+02	6.020E-02	1.993E+02

Summary : Residential (Town)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	1.781E-01	1.723E-01	1.614E-01	1.282E-01	6.641E-02	6.644E-03	9.247E-06	9.300E-16
Pb-210	Pb-210	1.320E-06	2.401E-07	2.323E-07	2.175E-07	1.728E-07	8.951E-08	8.956E-09	1.246E-11	1.254E-21
Pb-210	Ra-226	9.996E-01	2.832E-03	8.292E-03	1.863E-02	4.944E-02	1.036E-01	1.348E-01	1.083E-02	1.133E-02
Pb-210	Ra-226	2.100E-04	5.949E-07	1.742E-06	3.913E-06	1.038E-05	2.176E-05	2.832E-05	1.698E-05	2.380E-06
Pb-210	Ra-226	1.998E-04	5.660E-07	1.657E-06	3.722E-06	9.879E-06	2.070E-05	2.694E-05	1.615E-05	2.265E-06
Pb-210	Ra-226	4.196E-08	1.189E-10	3.480E-10	7.819E-10	2.075E-09	4.348E-09	5.659E-09	3.393E-09	4.757E-10
Pb-210	Ra-226	2.000E-07	5.667E-10	1.659E-09	3.727E-09	9.891E-09	2.073E-08	2.698E-08	1.617E-08	2.267E-09
Pb-210	Th-230	9.996E-01	4.137E-07	2.832E-06	1.455E-05	1.197E-04	8.124E-04	4.742E-03	1.402E-02	2.458E-02
Pb-210	Th-230	2.100E-04	8.689E-11	5.948E-10	3.055E-09	2.515E-08	1.706E-07	9.960E-07	2.946E-06	5.162E-06
Pb-210	Th-230	1.998E-04	8.267E-11	5.659E-10	2.907E-09	2.393E-08	1.623E-07	9.477E-07	2.803E-06	4.911E-06
Pb-210	Th-230	4.196E-08	1.736E-14	1.189E-13	6.106E-13	5.026E-12	3.410E-11	1.990E-10	5.887E-10	1.032E-09
Pb-210	Th-230	2.000E-07	8.277E-14	5.666E-13	2.911E-12	2.396E-11	1.625E-10	9.488E-10	2.806E-09	4.917E-09
Pb-210	U-234	9.996E-01	9.583E-13	1.405E-11	1.597E-10	3.946E-09	8.041E-08	1.665E-06	1.469E-05	5.789E-05
Pb-210	U-234	2.100E-04	2.013E-16	2.951E-15	3.354E-14	8.288E-13	1.689E-11	3.497E-10	3.086E-09	1.216E-08
Pb-210	U-234	1.998E-04	1.915E-16	2.808E-15	3.191E-14	7.885E-13	1.607E-11	3.327E-10	2.936E-09	1.157E-08
Pb-210	U-234	4.196E-08	4.022E-20	5.898E-19	6.702E-18	1.656E-16	3.375E-15	6.989E-14	6.167E-13	2.430E-12
Pb-210	U-234	2.000E-07	1.917E-19	2.811E-18	3.195E-17	7.895E-16	1.609E-14	3.331E-13	2.940E-12	1.158E-11
Pb-210	U-238	1.599E-03	8.715E-22	2.639E-20	6.480E-19	4.754E-17	2.868E-15	2.055E-13	5.538E-12	5.820E-11
Pb-210	U-238	3.359E-07	1.831E-25	5.543E-24	1.361E-22	9.986E-21	6.025E-19	4.316E-17	1.163E-15	1.222E-14
Pb-210	U-238	3.196E-07	1.742E-25	5.273E-24	1.295E-22	9.501E-21	5.732E-19	4.107E-17	1.107E-15	1.163E-14
Pb-210	U-238	6.713E-11	3.607E-29	1.108E-27	2.720E-26	1.996E-24	1.204E-22	8.626E-21	2.324E-19	2.443E-18
Pb-210	U-238	3.200E-10	1.741E-28	5.280E-27	1.297E-25	9.512E-24	5.739E-22	4.111E-20	1.108E-18	1.165E-17
Pb-210	U-238	9.980E-01	5.438E-19	1.647E-17	4.044E-16	2.967E-14	1.790E-12	1.282E-10	3.455E-09	3.632E-08
Pb-210	U-238	2.096E-04	1.142E-22	3.459E-21	8.493E-20	6.231E-18	3.760E-16	2.693E-14	7.258E-13	7.628E-12
Pb-210	U-238	1.994E-04	1.087E-22	3.291E-21	8.081E-20	5.928E-18	3.577E-16	2.562E-14	6.905E-13	7.258E-12
Pb-210	U-238	4.189E-08	2.283E-26	6.912E-25	1.697E-23	1.245E-21	7.513E-20	5.382E-18	1.450E-16	1.524E-15
Pb-210	U-238	1.997E-07	1.088E-25	3.295E-24	8.090E-23	5.936E-21	3.581E-19	2.566E-17	6.914E-16	7.267E-15
Pb-210	ΣDOSE(j)		1.809E-01	1.806E-01	1.800E-01	1.778E-01	1.708E-01	1.463E-01	9.492E-02	3.598E-02
Po-210	Pb-210	1.000E+00	1.455E-01	2.421E-01	2.447E-01	1.947E-01	1.009E-01	1.009E-02	1.405E-05	1.413E-15
Po-210	Po-210	1.000E+00	1.237E-01	1.954E-02	4.870E-04	1.191E-09	1.103E-25	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	1.729E-03	8.246E-03	2.365E-02	7.054E-02	1.530E-01	2.013E-01	1.208E-01	1.693E-02
Po-210	Ra-226	2.100E-04	3.632E-07	1.732E-06	4.967E-06	1.482E-05	3.215E-05	4.228E-05	2.537E-05	3.556E-06
Po-210	Ra-226	1.998E-04	3.456E-07	1.648E-06	4.726E-06	1.410E-05	3.058E-05	4.022E-05	2.413E-05	3.383E-06
Po-210	Ra-226	4.196E-08	7.258E-11	3.461E-10	9.926E-10	2.961E-09	6.424E-09	8.448E-09	5.069E-09	7.107E-10
Po-210	Ra-226	2.000E-07	3.460E-10	1.650E-09	4.732E-09	1.411E-08	3.062E-08	4.027E-08	2.416E-08	3.388E-09
Po-210	Th-230	9.996E-01	2.032E-07	2.262E-06	1.609E-05	1.619E-04	1.176E-03	7.027E-03	2.089E-02	3.666E-02
Po-210	Th-230	2.100E-04	4.269E-11	4.752E-10	3.379E-09	3.400E-08	2.469E-07	1.476E-06	4.388E-06	7.700E-06
Po-210	Th-230	1.998E-04	4.062E-11	4.521E-10	3.215E-09	3.235E-08	2.349E-07	1.404E-06	4.175E-06	7.326E-06
Po-210	Th-230	4.196E-08	8.531E-15	9.497E-14	6.753E-13	6.795E-12	4.935E-11	2.949E-10	8.770E-10	1.539E-09
Po-210	Th-230	2.000E-07	4.067E-14	4.527E-13	3.219E-12	3.239E-11	2.352E-10	1.406E-09	4.180E-09	7.335E-09
Po-210	U-234	9.996E-01	3.952E-13	9.526E-12	1.573E-10	5.081E-09	1.142E-07	2.453E-06	2.185E-05	8.633E-05
Po-210	U-234	2.100E-04	8.302E-17	2.001E-15	3.305E-14	1.067E-12	2.400E-11	5.152E-10	4.590E-09	1.813E-08
Po-210	U-234	1.998E-04	7.898E-17	1.904E-15	3.144E-14	1.015E-12	2.283E-11	4.902E-10	4.367E-09	1.725E-08
Po-210	U-234	4.196E-08	1.659E-20	3.999E-19	6.604E-18	2.133E-16	4.796E-15	1.030E-13	9.173E-13	3.624E-12
Po-210	U-234	2.000E-07	7.908E-20	1.906E-18	3.148E-17	1.017E-15	2.286E-14	4.908E-13	4.372E-12	1.727E-11
Po-210	U-238	1.599E-03	3.102E-22	1.566E-20	5.774E-19	5.846E-17	4.004E-15	3.010E-13	8.222E-12	8.677E-11
Po-210	U-238	3.359E-07	6.515E-26	3.289E-24	1.213E-22	1.228E-20	8.410E-19	6.323E-17	1.727E-15	1.823E-14
Po-210	U-238	3.196E-07	6.198E-26	3.129E-24	1.154E-22	1.168E-20	8.001E-19	6.016E-17	1.643E-15	1.734E-14

Summary : Residential (Town)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	1.249E-29	6.568E-28	2.424E-26	2.454E-24	1.681E-22	1.264E-20	3.451E-19	3.642E-18
Po-210	U-238	3.200E-10	6.201E-29	3.133E-27	1.155E-25	1.170E-23	8.011E-22	6.023E-20	1.645E-18	1.736E-17
Po-210	U-238	9.980E-01	1.935E-19	9.771E-18	3.603E-16	3.648E-14	2.498E-12	1.878E-10	5.131E-09	5.414E-08
Po-210	U-238	2.096E-04	4.065E-23	2.052E-21	7.568E-20	7.662E-18	5.248E-16	3.946E-14	1.078E-12	1.137E-11
Po-210	U-238	1.994E-04	3.868E-23	1.953E-21	7.201E-20	7.290E-18	4.993E-16	3.754E-14	1.025E-12	1.082E-11
Po-210	U-238	4.189E-08	8.124E-27	4.101E-25	1.512E-23	1.531E-21	1.049E-19	7.885E-18	2.154E-16	2.273E-15
Po-210	U-238	1.997E-07	3.873E-26	1.955E-24	7.209E-23	7.299E-21	4.999E-19	3.759E-17	1.027E-15	1.083E-14
Po-210	ΣDOSE(j)		2.710E-01	2.699E-01	2.688E-01	2.655E-01	2.552E-01	2.185E-01	1.418E-01	5.370E-02
Pb-210	Pb-210	1.900E-08	6.920E-09	6.696E-09	6.270E-09	4.981E-09	2.580E-09	2.582E-10	3.593E-13	3.614E-23
Pb-210	Ra-226	1.899E-08	1.092E-10	3.212E-10	7.228E-10	1.920E-09	4.024E-09	5.238E-09	3.140E-09	4.402E-10
Pb-210	Ra-226	3.989E-12	2.295E-14	6.747E-14	1.518E-13	4.033E-13	8.452E-13	1.100E-12	6.596E-13	9.247E-14
Pb-210	Ra-226	3.795E-12	2.183E-14	6.420E-14	1.445E-13	3.837E-13	8.041E-13	1.047E-12	6.275E-13	8.798E-14
Pb-210	Ra-226	7.972E-16	4.586E-18	1.348E-17	3.034E-17	8.059E-17	1.689E-16	2.199E-16	1.318E-16	1.848E-17
Pb-210	Ra-226	3.800E-15	2.186E-17	6.427E-17	1.446E-16	3.842E-16	8.051E-16	1.048E-15	6.283E-16	8.809E-17
Pb-210	Th-230	1.899E-08	1.565E-14	1.087E-13	5.620E-13	4.643E-12	3.154E-11	1.842E-10	5.447E-10	9.546E-10
Pb-210	Th-230	3.989E-12	3.287E-18	2.283E-17	1.181E-16	9.751E-16	6.624E-15	3.869E-14	1.144E-13	2.005E-13
Pb-210	Th-230	3.795E-12	3.128E-18	2.172E-17	1.123E-16	9.278E-16	6.302E-15	3.681E-14	1.089E-13	1.908E-13
Pb-210	Th-230	7.972E-16	6.570E-22	4.562E-21	2.359E-20	1.949E-19	1.324E-18	7.731E-18	2.286E-17	4.007E-17
Pb-210	Th-230	3.800E-15	3.132E-21	2.175E-20	1.125E-19	9.289E-19	6.310E-18	3.685E-17	1.090E-16	1.910E-16
Pb-210	U-234	1.899E-08	3.597E-20	5.366E-19	6.153E-18	1.529E-16	3.121E-15	6.466E-14	5.707E-13	2.248E-12
Pb-210	U-234	3.989E-12	7.556E-24	1.127E-22	1.292E-21	3.211E-20	6.555E-19	1.358E-17	1.199E-16	4.723E-16
Pb-210	U-234	3.795E-12	7.189E-24	1.072E-22	1.230E-21	3.055E-20	6.236E-19	1.292E-17	1.140E-16	4.493E-16
Pb-210	U-234	7.972E-16	1.510E-27	2.252E-26	2.583E-25	6.416E-24	1.310E-22	2.714E-21	2.395E-20	9.438E-20
Pb-210	U-234	3.800E-15	7.198E-27	1.074E-25	1.231E-24	3.058E-23	6.244E-22	1.294E-20	1.142E-19	4.499E-19
Pb-210	U-238	3.039E-11	3.247E-29	1.002E-27	2.491E-26	1.840E-24	1.113E-22	7.979E-21	2.151E-19	2.261E-18
Pb-210	U-238	6.383E-15	0.000E+00	0.000E+00	4.890E-30	3.862E-28	2.337E-26	1.676E-24	4.518E-23	4.748E-22
Pb-210	U-238	6.073E-15	0.000E+00	0.000E+00	4.652E-30	3.675E-28	2.224E-26	1.595E-24	4.298E-23	4.518E-22
Pb-210	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.360E-30	3.347E-28	9.028E-27	9.489E-26
Pb-210	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.225E-29	1.597E-27	4.303E-26	4.523E-25
Pb-210	U-238	1.896E-08	2.027E-26	6.259E-25	1.554E-23	1.148E-21	6.944E-20	4.979E-18	1.342E-16	1.411E-15
Pb-210	U-238	3.983E-12	3.999E-30	1.314E-28	3.265E-27	2.412E-25	1.459E-23	1.046E-21	2.819E-20	2.963E-19
Pb-210	U-238	3.789E-12	3.804E-30	1.250E-28	3.106E-27	2.295E-25	1.388E-23	9.950E-22	2.682E-20	2.819E-19
Pb-210	U-238	7.959E-16	0.000E+00	0.000E+00	0.000E+00	4.816E-29	2.915E-27	2.090E-25	5.634E-24	5.921E-23
Pb-210	U-238	3.794E-15	0.000E+00	0.000E+00	2.906E-30	2.296E-28	1.389E-26	9.962E-25	2.685E-23	2.823E-22
Pb-210	ΣDOSE(j)		7.030E-09	7.018E-09	6.994E-09	6.906E-09	6.637E-09	5.683E-09	3.687E-09	1.398E-09
Ra-226	Ra-226	9.996E-01	3.241E+00	3.232E+00	3.214E+00	3.152E+00	2.979E+00	2.448E+00	1.396E+00	1.957E-01
Ra-226	Ra-226	1.319E-06	4.278E-06	4.266E-06	4.243E-06	4.160E-06	3.933E-06	3.231E-06	1.843E-06	2.584E-07
Ra-226	Th-230	9.996E-01	7.021E-04	2.104E-03	4.897E-03	1.455E-02	4.109E-02	1.231E-01	2.849E-01	4.668E-01
Ra-226	Th-230	1.319E-06	9.268E-10	2.778E-09	6.464E-09	1.920E-08	5.424E-08	1.624E-07	3.760E-07	6.161E-07
Ra-226	Th-230	1.899E-08	1.334E-11	3.998E-11	9.304E-11	2.764E-10	7.808E-10	2.338E-09	5.412E-09	8.868E-09
Ra-226	U-234	9.996E-01	2.150E-09	1.503E-08	7.915E-08	6.981E-07	5.652E-06	5.330E-05	3.235E-04	1.113E-03
Ra-226	U-234	1.319E-06	2.838E-15	1.984E-14	1.045E-13	9.215E-13	7.460E-12	7.036E-11	4.270E-10	1.469E-09
Ra-226	U-234	1.899E-08	4.085E-17	2.856E-16	1.504E-15	1.326E-14	1.074E-13	1.013E-12	6.146E-12	2.114E-11
Ra-226	U-238	1.599E-03	2.427E-18	3.635E-17	4.222E-16	1.102E-14	2.571E-13	7.807E-12	1.321E-10	1.138E-09
Ra-226	U-238	2.111E-09	3.204E-24	4.798E-23	5.574E-22	1.454E-20	3.394E-19	1.030E-17	1.744E-16	1.503E-15
Ra-226	U-238	3.039E-11	4.611E-26	6.906E-25	8.023E-24	2.093E-22	4.885E-21	1.483E-19	2.510E-18	2.163E-17
Ra-226	U-238	9.980E-01	1.514E-15	2.268E-14	2.635E-13	6.875E-12	1.604E-10	4.871E-09	8.245E-08	7.103E-07

Summary : Residential (Town)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	1.999E-21	2.994E-20	3.478E-19	9.074E-18	2.118E-16	6.430E-15	1.088E-13	9.376E-13
Ra-226	U-238	1.896E-08	2.877E-23	4.309E-22	5.006E-21	1.306E-19	3.048E-18	9.256E-17	1.567E-15	1.350E-14
Ra-226	ΣDOSE(j)		3.242E+00	3.234E+00	3.219E+00	3.166E+00	3.021E+00	2.571E+00	1.682E+00	6.636E-01
Pb-210	Ra-226	1.319E-06	3.816E-09	1.117E-08	2.511E-08	6.663E-08	1.396E-07	1.817E-07	1.089E-07	1.527E-08
Pb-210	Ra-226	2.771E-10	8.016E-13	2.347E-12	5.273E-12	1.400E-11	2.933E-11	3.817E-11	2.288E-11	3.208E-12
Pb-210	Ra-226	2.637E-10	7.626E-13	2.233E-12	5.017E-12	1.332E-11	2.790E-11	3.632E-11	2.177E-11	3.052E-12
Pb-210	Ra-226	5.538E-14	1.602E-16	4.691E-16	1.054E-15	2.797E-15	5.860E-15	7.628E-15	4.573E-15	6.411E-16
Pb-210	Ra-226	2.640E-13	7.636E-16	2.236E-15	5.023E-15	1.333E-14	2.793E-14	3.636E-14	2.180E-14	3.056E-15
Pb-210	Th-230	1.319E-06	5.408E-13	3.763E-12	1.948E-11	1.610E-10	1.094E-09	6.388E-09	1.889E-08	3.311E-08
Pb-210	Th-230	2.771E-10	1.136E-16	7.905E-16	4.092E-15	3.382E-14	2.298E-13	1.342E-12	3.969E-12	6.955E-12
Pb-210	Th-230	2.637E-10	1.081E-16	7.521E-16	3.893E-15	3.217E-14	2.186E-13	1.277E-12	3.776E-12	6.617E-12
Pb-210	Th-230	5.538E-14	2.270E-20	1.580E-19	8.177E-19	6.758E-18	4.592E-17	2.682E-16	7.931E-16	1.390E-15
Pb-210	Th-230	2.640E-13	1.082E-19	7.530E-19	3.898E-18	3.221E-17	2.189E-16	1.278E-15	3.781E-15	6.625E-15
Pb-210	U-234	1.319E-06	1.241E-18	1.857E-17	2.132E-16	5.300E-15	1.082E-13	2.243E-12	1.979E-11	7.799E-11
Pb-210	U-234	2.771E-10	2.608E-22	3.900E-21	4.478E-20	1.113E-18	2.273E-17	4.711E-16	4.158E-15	1.638E-14
Pb-210	U-234	2.637E-10	2.481E-22	3.710E-21	4.261E-20	1.059E-18	2.163E-17	4.482E-16	3.956E-15	1.559E-14
Pb-210	U-234	5.538E-14	5.211E-26	7.793E-25	8.949E-24	2.225E-22	4.543E-21	9.414E-20	8.309E-19	3.274E-18
Pb-210	U-234	2.640E-13	2.484E-25	3.715E-24	4.266E-23	1.061E-21	2.166E-20	4.487E-19	3.960E-18	1.561E-17
Pb-210	U-238	2.111E-09	1.120E-27	3.468E-26	8.628E-25	6.380E-23	3.860E-21	2.768E-19	7.461E-18	7.842E-17
Pb-210	U-238	4.434E-13	0.000E+00	6.103E-30	1.810E-28	1.340E-26	8.107E-25	5.813E-23	1.567E-21	1.647E-20
Pb-210	U-238	4.219E-13	0.000E+00	5.806E-30	1.722E-28	1.275E-26	7.713E-25	5.531E-23	1.491E-21	1.567E-20
Pb-210	U-238	8.862E-17	0.000E+00	0.000E+00	0.000E+00	2.231E-30	1.618E-28	1.162E-26	3.132E-25	3.292E-24
Pb-210	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	1.232E-29	7.722E-28	5.538E-26	1.493E-24	1.569E-23
Pb-210	U-238	1.317E-06	6.988E-25	2.164E-23	5.384E-22	3.981E-20	2.408E-18	1.727E-16	4.655E-15	4.893E-14
Pb-210	U-238	2.767E-10	1.466E-28	4.546E-27	1.131E-25	8.362E-24	5.059E-22	3.628E-20	9.778E-19	1.028E-17
Pb-210	U-238	2.633E-10	1.395E-28	4.325E-27	1.076E-25	7.955E-24	4.813E-22	3.451E-20	9.303E-19	9.779E-18
Pb-210	U-238	5.530E-14	0.000E+00	0.000E+00	2.181E-29	1.671E-27	1.011E-25	7.249E-24	1.954E-22	2.054E-21
Pb-210	U-238	2.636E-13	0.000E+00	3.628E-30	1.076E-28	7.965E-27	4.819E-25	3.455E-23	9.315E-22	9.791E-21
Pb-210	ΣDOSE(j)		3.818E-09	1.118E-08	2.514E-08	6.682E-08	1.408E-07	1.882E-07	1.279E-07	4.848E-08
Ra-226	Ra-226	1.899E-08	6.158E-08	6.141E-08	6.107E-08	5.988E-08	5.661E-08	4.651E-08	2.653E-08	3.719E-09
Ra-226	Ra-226	2.100E-04	1.737E-03	1.733E-03	1.723E-03	1.689E-03	1.597E-03	1.312E-03	7.485E-04	1.049E-04
Ra-226	ΣDOSE(j)		1.737E-03	1.733E-03	1.723E-03	1.689E-03	1.597E-03	1.312E-03	7.485E-04	1.049E-04
Ra-226	Ra-226	2.771E-10	2.293E-09	2.287E-09	2.274E-09	2.230E-09	2.108E-09	1.732E-09	9.880E-10	1.385E-10
Ra-226	Ra-226	3.989E-12	3.301E-11	3.292E-11	3.273E-11	3.210E-11	3.034E-11	2.493E-11	1.422E-11	1.993E-12
Ra-226	ΣDOSE(j)		2.326E-09	2.320E-09	2.307E-09	2.262E-09	2.138E-09	1.757E-09	1.002E-09	1.405E-10
Ra-226	Ra-226	1.998E-04	5.710E-04	5.694E-04	5.663E-04	5.552E-04	5.249E-04	4.313E-04	2.460E-04	3.448E-05
Ra-226	Ra-226	2.637E-10	7.538E-10	7.517E-10	7.475E-10	7.329E-10	6.929E-10	5.693E-10	3.247E-10	4.552E-11
Ra-226	Th-230	1.998E-04	1.237E-07	3.707E-07	8.627E-07	2.563E-06	7.240E-06	2.168E-05	5.019E-05	8.223E-05
Ra-226	Th-230	2.637E-10	1.633E-13	4.893E-13	1.139E-12	3.383E-12	9.557E-12	2.862E-11	6.624E-11	1.085E-10
Ra-226	Th-230	3.795E-12	2.350E-15	7.044E-15	1.639E-14	4.870E-14	1.376E-13	4.119E-13	9.535E-13	1.562E-12
Ra-226	U-234	1.998E-04	3.788E-13	2.648E-12	1.394E-11	1.230E-10	9.957E-10	9.390E-09	5.699E-08	1.960E-07
Ra-226	U-234	2.637E-10	5.000E-19	3.495E-18	1.841E-17	1.623E-16	1.314E-15	1.240E-14	7.523E-14	2.587E-13
Ra-226	U-234	3.795E-12	7.197E-21	5.031E-20	2.649E-19	2.337E-18	1.892E-17	1.784E-16	1.083E-15	3.724E-15
Ra-226	U-238	3.196E-07	4.275E-22	6.403E-21	7.439E-20	1.941E-18	4.529E-17	1.375E-15	2.328E-14	2.006E-13
Ra-226	U-238	4.219E-13	5.642E-28	8.452E-27	9.819E-26	2.562E-24	5.979E-23	1.815E-21	3.073E-20	2.647E-19

Summary : Residential (Town)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	7.842E-30	1.216E-28	1.413E-27	3.688E-26	8.606E-25	2.613E-23	4.423E-22	3.810E-21
Ra-226	U-238	1.994E-04	2.668E-19	3.996E-18	4.642E-17	1.211E-15	2.826E-14	8.582E-13	1.453E-11	1.251E-10
Ra-226	U-238	2.633E-10	3.521E-25	5.274E-24	6.127E-23	1.599E-21	3.731E-20	1.133E-18	1.917E-17	1.652E-16
Ra-226	U-238	3.789E-12	5.068E-27	7.592E-26	8.819E-25	2.301E-23	5.370E-22	1.631E-20	2.760E-19	2.378E-18
Ra-226	ΣDOSE (j)		5.712E-04	5.698E-04	5.671E-04	5.578E-04	5.322E-04	4.530E-04	2.963E-04	1.169E-04
Ra-226	Ra-226	3.795E-12	1.085E-11	1.082E-11	1.076E-11	1.055E-11	9.974E-12	8.194E-12	4.674E-12	6.552E-13
Ra-226	Ra-226	4.196E-08	3.311E-07	3.302E-07	3.283E-07	3.219E-07	3.044E-07	2.501E-07	1.426E-07	1.999E-08
Ra-226	ΣDOSE (j)		3.311E-07	3.302E-07	3.283E-07	3.219E-07	3.044E-07	2.501E-07	1.426E-07	1.999E-08
Ra-226	Ra-226	5.538E-14	4.370E-13	4.358E-13	4.334E-13	4.249E-13	4.017E-13	3.301E-13	1.883E-13	2.639E-14
Ra-226	Ra-226	7.972E-16	6.291E-15	6.273E-15	6.238E-15	6.117E-15	5.783E-15	4.751E-15	2.710E-15	3.799E-16
Ra-226	ΣDOSE (j)		4.433E-13	4.421E-13	4.396E-13	4.311E-13	4.075E-13	3.348E-13	1.910E-13	2.677E-14
Ra-226	Ra-226	2.000E-07	2.270E-08	2.264E-08	2.251E-08	2.208E-08	2.087E-08	1.715E-08	9.781E-09	1.371E-09
Ra-226	Ra-226	2.640E-13	2.997E-14	2.988E-14	2.972E-14	2.914E-14	2.755E-14	2.263E-14	1.291E-14	1.810E-15
Ra-226	Th-230	2.000E-07	4.861E-12	1.467E-11	3.423E-11	1.018E-10	2.878E-10	8.619E-10	1.995E-09	3.269E-09
Ra-226	Th-230	2.640E-13	6.417E-18	1.937E-17	4.519E-17	1.344E-16	3.799E-16	1.138E-15	2.634E-15	4.316E-15
Ra-226	Th-230	3.800E-15	9.237E-20	2.788E-19	6.504E-19	1.935E-18	5.468E-18	1.638E-17	3.791E-17	6.212E-17
Ra-226	U-234	2.000E-07	1.477E-17	1.044E-16	5.522E-16	4.883E-15	3.957E-14	3.733E-13	2.266E-12	7.793E-12
Ra-226	U-234	2.640E-13	1.949E-23	1.378E-22	7.289E-22	6.446E-21	5.223E-20	4.927E-19	2.991E-18	1.029E-17
Ra-226	U-234	3.800E-15	2.806E-25	1.983E-24	1.049E-23	9.279E-23	7.518E-22	7.093E-21	4.305E-20	1.481E-19
Ra-226	U-238	3.200E-10	1.656E-26	2.514E-25	2.941E-24	7.702E-23	1.800E-21	5.467E-20	9.254E-19	7.974E-18
Ra-226	U-238	4.224E-16	0.000E+00	0.000E+00	3.461E-30	1.013E-28	2.375E-27	7.216E-26	1.222E-24	1.053E-23
Ra-226	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.406E-29	1.039E-27	1.758E-26	1.515E-25
Ra-226	U-238	1.997E-07	1.033E-23	1.569E-22	1.835E-21	4.806E-20	1.123E-18	3.411E-17	5.775E-16	4.976E-15
Ra-226	U-238	2.636E-13	1.359E-29	2.063E-28	2.422E-27	6.344E-26	1.482E-24	4.503E-23	7.623E-22	6.568E-21
Ra-226	U-238	3.794E-15	0.000E+00	2.656E-30	3.473E-29	9.131E-28	2.134E-26	6.482E-25	1.097E-23	9.454E-23
Ra-226	ΣDOSE (j)		2.271E-08	2.265E-08	2.255E-08	2.218E-08	2.116E-08	1.801E-08	1.178E-08	4.648E-09
Ra-226	Ra-226	3.800E-15	4.314E-16	4.302E-16	4.278E-16	4.194E-16	3.965E-16	3.258E-16	1.858E-16	2.605E-17
Th-230	Th-230	9.996E-01	5.276E-02	5.276E-02	5.276E-02	5.276E-02	5.274E-02	5.270E-02	5.257E-02	5.213E-02
Th-230	Th-230	1.319E-06	6.965E-08	6.964E-08	6.964E-08	6.964E-08	6.962E-08	6.956E-08	6.940E-08	6.882E-08
Th-230	U-234	9.996E-01	2.425E-07	7.261E-07	1.688E-06	5.006E-06	1.407E-05	4.143E-05	9.203E-05	1.396E-04
Th-230	U-234	1.319E-06	3.201E-13	9.584E-13	2.229E-12	6.608E-12	1.857E-11	5.469E-11	1.215E-10	1.842E-10
Th-230	U-234	1.899E-08	4.607E-15	1.380E-14	3.208E-14	9.512E-14	2.673E-13	7.871E-13	1.749E-12	2.651E-12
Th-230	U-234	2.100E-04	5.093E-11	1.525E-10	3.546E-10	1.052E-09	2.955E-09	8.702E-09	1.933E-08	2.931E-08
Th-230	U-234	2.771E-10	6.723E-17	2.013E-16	4.681E-16	1.388E-15	3.901E-15	1.149E-14	2.552E-14	3.869E-14
Th-230	U-234	3.989E-12	9.678E-19	2.898E-18	6.738E-18	1.998E-17	5.615E-17	1.653E-16	3.673E-16	5.569E-16
Th-230	U-234	1.998E-04	4.846E-11	1.451E-10	3.374E-10	1.000E-09	2.812E-09	8.279E-09	1.839E-08	2.789E-08
Th-230	U-234	2.637E-10	6.397E-17	1.915E-16	4.454E-16	1.321E-15	3.712E-15	1.093E-14	2.428E-14	3.681E-14
Th-230	U-234	3.795E-12	9.207E-19	2.757E-18	6.411E-18	1.901E-17	5.342E-17	1.573E-16	3.494E-16	5.299E-16
Th-230	U-234	4.196E-08	1.018E-14	3.048E-14	7.087E-14	2.101E-13	5.906E-13	1.739E-12	3.863E-12	5.858E-12
Th-230	U-234	5.538E-14	1.344E-20	4.023E-20	9.355E-20	2.774E-19	7.796E-19	2.295E-18	5.099E-18	7.732E-18
Th-230	U-234	7.972E-16	1.934E-22	5.791E-22	1.347E-21	3.993E-21	1.122E-20	3.304E-20	7.340E-20	1.113E-19
Th-230	U-234	2.000E-07	4.852E-14	1.453E-13	3.378E-13	1.002E-12	2.815E-12	8.289E-12	1.841E-11	2.792E-11
Th-230	U-234	2.640E-13	6.404E-20	1.918E-19	4.459E-19	1.322E-18	3.716E-18	1.094E-17	2.431E-17	3.686E-17
Th-230	U-234	3.800E-15	9.219E-22	2.760E-21	6.418E-21	1.903E-20	5.349E-20	1.575E-19	3.499E-19	5.305E-19

Summary : Residential (Town)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	3.651E-16	2.549E-15	1.341E-14	1.181E-13	9.531E-13	8.885E-12	5.229E-11	1.667E-10
Th-230	U-238	2.111E-09	4.820E-22	3.365E-21	1.771E-20	1.559E-19	1.258E-18	1.173E-17	6.903E-17	2.200E-16
Th-230	U-238	3.039E-11	6.938E-24	4.844E-23	2.548E-22	2.245E-21	1.811E-20	1.688E-19	9.935E-19	3.167E-18
Th-230	U-238	3.359E-07	7.669E-20	5.355E-19	2.817E-18	2.481E-17	2.002E-16	1.866E-15	1.098E-14	3.501E-14
Th-230	U-238	4.434E-13	1.012E-25	7.068E-25	3.719E-24	3.275E-23	2.643E-22	2.463E-21	1.450E-20	4.622E-20
Th-230	U-238	6.383E-15	1.457E-27	1.017E-26	5.353E-26	4.715E-25	3.804E-24	3.546E-23	2.087E-22	6.653E-22
Th-230	U-238	3.196E-07	7.297E-20	5.095E-19	2.680E-18	2.361E-17	1.905E-16	1.776E-15	1.045E-14	3.331E-14
Th-230	U-238	4.219E-13	9.632E-26	6.725E-25	3.538E-24	3.116E-23	2.514E-22	2.344E-21	1.379E-20	4.397E-20
Th-230	U-238	6.073E-15	1.386E-27	9.680E-27	5.093E-26	4.486E-25	3.619E-24	3.374E-23	1.986E-22	6.330E-22
Th-230	U-238	6.713E-11	1.533E-23	1.070E-22	5.630E-22	4.959E-21	4.001E-20	3.729E-19	2.195E-18	6.997E-18
Th-230	U-238	8.862E-17	1.979E-29	1.403E-28	7.432E-28	6.546E-27	5.281E-26	4.923E-25	2.897E-24	9.237E-24
Th-230	U-238	1.276E-18	0.000E+00	1.815E-30	9.553E-30	9.360E-29	7.601E-28	7.086E-27	4.170E-26	1.330E-25
Th-230	U-238	3.200E-10	7.306E-23	5.101E-22	2.684E-21	2.364E-20	1.907E-19	1.778E-18	1.046E-17	3.335E-17
Th-230	U-238	4.224E-16	9.581E-29	6.733E-28	3.542E-27	3.120E-26	2.517E-25	2.347E-24	1.381E-23	4.403E-23
Th-230	U-238	6.080E-18	1.238E-30	8.652E-30	4.992E-29	4.491E-28	3.623E-27	3.378E-26	1.988E-25	6.337E-25
Th-230	U-238	9.980E-01	2.278E-13	1.591E-12	8.370E-12	7.372E-11	5.947E-10	5.544E-09	3.263E-08	1.040E-07
Th-230	U-238	1.317E-06	3.008E-19	2.100E-18	1.105E-17	9.731E-17	7.851E-16	7.318E-15	4.307E-14	1.373E-13
Th-230	U-238	1.896E-08	4.329E-21	3.022E-20	1.590E-19	1.401E-18	1.130E-17	1.053E-16	6.200E-16	1.976E-15
Th-230	U-238	2.096E-04	4.786E-17	3.341E-16	1.758E-15	1.548E-14	1.249E-13	1.165E-12	6.854E-12	2.185E-11
Th-230	U-238	2.767E-10	6.317E-23	4.411E-22	2.321E-21	2.044E-20	1.649E-19	1.537E-18	9.047E-18	2.884E-17
Th-230	U-238	3.983E-12	9.093E-25	6.349E-24	3.340E-23	2.942E-22	2.374E-21	2.213E-20	1.302E-19	4.151E-19
Th-230	U-238	1.994E-04	4.553E-17	3.179E-16	1.673E-15	1.473E-14	1.189E-13	1.108E-12	6.521E-12	2.079E-11
Th-230	U-238	2.633E-10	6.010E-23	4.196E-22	2.208E-21	1.945E-20	1.569E-19	1.462E-18	8.607E-18	2.744E-17
Th-230	U-238	3.789E-12	8.651E-25	6.040E-24	3.178E-23	2.799E-22	2.258E-21	2.105E-20	1.239E-19	3.950E-19
Th-230	U-238	4.189E-08	9.564E-21	6.677E-20	3.513E-19	3.094E-18	2.496E-17	2.327E-16	1.370E-15	4.366E-15
Th-230	U-238	5.530E-14	1.262E-26	8.814E-26	4.637E-25	4.084E-24	3.295E-23	3.072E-22	1.808E-21	5.764E-21
Th-230	U-238	7.959E-16	1.817E-28	1.269E-27	6.675E-27	5.879E-26	4.743E-25	4.422E-24	2.602E-23	8.296E-23
Th-230	U-238	1.997E-07	4.559E-20	3.183E-19	1.675E-18	1.475E-17	1.190E-16	1.109E-15	6.529E-15	2.081E-14
Th-230	U-238	2.636E-13	6.018E-26	4.201E-25	2.211E-24	1.947E-23	1.571E-22	1.464E-21	8.618E-21	2.747E-20
Th-230	U-238	3.794E-15	8.662E-28	6.047E-27	3.182E-26	2.802E-25	2.261E-24	2.108E-23	1.240E-22	3.954E-22
Th-230	ΣDOSE(j)		5.276E-02	5.276E-02	5.276E-02	5.276E-02	5.276E-02	5.274E-02	5.266E-02	5.227E-02
Th-230	Th-230	1.899E-08	1.002E-09	1.002E-09	1.002E-09	1.002E-09	1.002E-09	1.001E-09	9.989E-10	9.905E-10
Th-230	Th-230	2.100E-04	1.108E-05	1.108E-05	1.108E-05	1.108E-05	1.108E-05	1.107E-05	1.104E-05	1.095E-05
Th-230	ΣDOSE(j)		1.108E-05	1.108E-05	1.108E-05	1.108E-05	1.108E-05	1.107E-05	1.104E-05	1.095E-05
Ra-226	Th-230	2.100E-04	3.764E-07	1.128E-06	2.625E-06	7.798E-06	2.203E-05	6.596E-05	1.527E-04	2.502E-04
Ra-226	Th-230	3.989E-12	7.152E-15	2.143E-14	4.987E-14	1.482E-13	4.185E-13	1.253E-12	2.901E-12	4.754E-12
Ra-226	U-234	2.100E-04	1.153E-12	8.058E-12	4.243E-11	3.742E-10	3.030E-09	2.857E-08	1.734E-07	5.963E-07
Ra-226	U-234	2.771E-10	1.522E-18	1.064E-17	5.601E-17	4.940E-16	3.999E-15	3.771E-14	2.289E-13	7.872E-13
Ra-226	U-234	3.989E-12	2.191E-20	1.531E-19	8.061E-19	7.110E-18	5.756E-17	5.428E-16	3.294E-15	1.133E-14
Ra-226	U-238	3.359E-07	1.302E-21	1.949E-20	2.264E-19	5.906E-18	1.378E-16	4.185E-15	7.083E-14	6.102E-13
Ra-226	U-238	4.434E-13	1.718E-27	2.572E-26	2.988E-25	7.795E-24	1.819E-22	5.524E-21	9.349E-20	8.054E-19
Ra-226	U-238	6.383E-15	2.444E-29	3.703E-28	4.301E-27	1.122E-25	2.618E-24	7.951E-23	1.346E-21	1.159E-20
Ra-226	U-238	2.096E-04	8.122E-19	1.216E-17	1.412E-16	3.685E-15	8.599E-14	2.611E-12	4.419E-11	3.808E-10
Ra-226	U-238	2.767E-10	1.072E-24	1.605E-23	1.864E-22	4.864E-21	1.135E-19	3.447E-18	5.834E-17	5.026E-16
Ra-226	U-238	3.983E-12	1.543E-26	2.311E-25	2.684E-24	7.002E-23	1.634E-21	4.961E-20	8.397E-19	7.234E-18
Ra-226	ΣDOSE(j)		3.764E-07	1.128E-06	2.625E-06	7.798E-06	2.203E-05	6.599E-05	1.529E-04	2.508E-04

Summary : Residential (Town)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	1.463E-11	1.463E-11	1.463E-11	1.463E-11	1.462E-11	1.461E-11	1.458E-11	1.445E-11
Th-230	Th-230	3.989E-12	2.106E-13	2.106E-13	2.106E-13	2.105E-13	2.105E-13	2.103E-13	2.098E-13	2.081E-13
Th-230	ΣDOSE(j)		1.484E-11	1.484E-11	1.484E-11	1.484E-11	1.483E-11	1.482E-11	1.479E-11	1.466E-11
Ra-226	Th-230	2.771E-10	4.969E-13	1.489E-12	3.465E-12	1.029E-11	2.908E-11	8.707E-11	2.015E-10	3.303E-10
Th-230	Th-230	1.998E-04	1.054E-05	1.054E-05	1.054E-05	1.054E-05	1.054E-05	1.053E-05	1.051E-05	1.042E-05
Th-230	Th-230	2.637E-10	1.392E-11	1.392E-11	1.392E-11	1.392E-11	1.391E-11	1.390E-11	1.387E-11	1.375E-11
Th-230	ΣDOSE(j)		1.054E-05	1.054E-05	1.054E-05	1.054E-05	1.054E-05	1.053E-05	1.051E-05	1.042E-05
Th-230	Th-230	3.795E-12	2.003E-13	2.003E-13	2.003E-13	2.003E-13	2.003E-13	2.001E-13	1.996E-13	1.979E-13
Th-230	Th-230	4.196E-08	2.215E-09	2.215E-09	2.215E-09	2.214E-09	2.214E-09	2.212E-09	2.207E-09	2.188E-09
Th-230	ΣDOSE(j)		2.215E-09	2.215E-09	2.215E-09	2.215E-09	2.214E-09	2.212E-09	2.207E-09	2.189E-09
Ra-226	Th-230	4.196E-08	7.174E-11	2.150E-10	5.002E-10	1.486E-09	4.198E-09	1.257E-08	2.910E-08	4.768E-08
Ra-226	Th-230	7.972E-16	1.363E-18	4.084E-18	9.504E-18	2.823E-17	7.976E-17	2.388E-16	5.529E-16	9.059E-16
Ra-226	U-234	4.196E-08	2.197E-16	1.536E-15	8.085E-15	7.131E-14	5.773E-13	5.445E-12	3.304E-11	1.136E-10
Ra-226	U-234	5.538E-14	2.900E-22	2.027E-21	1.067E-20	9.413E-20	7.621E-19	7.187E-18	4.362E-17	1.500E-16
Ra-226	U-234	7.972E-16	4.175E-24	2.918E-23	1.536E-22	1.355E-21	1.097E-20	1.034E-19	6.278E-19	2.159E-18
Ra-226	U-238	6.713E-11	2.480E-25	3.714E-24	4.314E-23	1.125E-21	2.626E-20	7.974E-19	1.350E-17	1.163E-16
Ra-226	U-238	8.862E-17	0.000E+00	4.840E-30	5.621E-29	1.485E-27	3.467E-26	1.053E-24	1.782E-23	1.535E-22
Ra-226	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	2.111E-29	4.990E-28	1.515E-26	2.564E-25	2.209E-24
Ra-226	U-238	4.189E-08	1.548E-22	2.317E-21	2.692E-20	7.023E-19	1.639E-17	4.976E-16	8.422E-15	7.256E-14
Ra-226	U-238	5.530E-14	2.034E-28	3.059E-27	3.553E-26	9.270E-25	2.163E-23	6.568E-22	1.112E-20	9.578E-20
Ra-226	U-238	7.959E-16	2.904E-30	4.347E-29	5.114E-28	1.334E-26	3.114E-25	9.454E-24	1.600E-22	1.379E-21
Ra-226	ΣDOSE(j)		7.174E-11	2.150E-10	5.002E-10	1.486E-09	4.198E-09	1.258E-08	2.913E-08	4.779E-08
Th-230	Th-230	5.538E-14	2.923E-15	2.923E-15	2.923E-15	2.923E-15	2.922E-15	2.920E-15	2.913E-15	2.889E-15
Th-230	Th-230	7.972E-16	4.208E-17	4.208E-17	4.208E-17	4.207E-17	4.206E-17	4.203E-17	4.193E-17	4.158E-17
Th-230	ΣDOSE(j)		2.965E-15	2.965E-15	2.965E-15	2.965E-15	2.964E-15	2.962E-15	2.955E-15	2.930E-15
Ra-226	Th-230	5.538E-14	9.469E-17	2.838E-16	6.603E-16	1.962E-15	5.541E-15	1.659E-14	3.841E-14	6.294E-14
Th-230	Th-230	2.000E-07	1.056E-08	1.056E-08	1.056E-08	1.056E-08	1.055E-08	1.054E-08	1.052E-08	1.043E-08
Th-230	Th-230	2.640E-13	1.393E-14	1.393E-14	1.393E-14	1.393E-14	1.393E-14	1.392E-14	1.388E-14	1.377E-14
Th-230	ΣDOSE(j)		1.056E-08	1.056E-08	1.056E-08	1.056E-08	1.055E-08	1.054E-08	1.052E-08	1.043E-08
Th-230	Th-230	3.800E-15	2.006E-16	2.006E-16	2.006E-16	2.006E-16	2.005E-16	2.003E-16	1.999E-16	1.982E-16
U-234	U-234	9.996E-01	1.184E-02	1.180E-02	1.172E-02	1.145E-02	1.072E-02	8.493E-03	4.370E-03	4.272E-04
U-234	U-234	1.319E-06	1.563E-08	1.558E-08	1.547E-08	1.512E-08	1.415E-08	1.121E-08	5.769E-09	5.639E-10
U-234	U-238	1.599E-03	2.673E-11	7.994E-11	1.853E-10	5.432E-10	1.477E-09	3.856E-09	5.935E-09	1.933E-09
U-234	U-238	2.111E-09	3.528E-17	1.055E-16	2.446E-16	7.170E-16	1.949E-15	5.090E-15	7.834E-15	2.552E-15
U-234	U-238	3.039E-11	5.078E-19	1.519E-18	3.521E-18	1.032E-17	2.805E-17	7.327E-17	1.128E-16	3.674E-17
U-234	U-238	3.359E-07	5.614E-15	1.679E-14	3.893E-14	1.141E-13	3.101E-13	8.100E-13	1.247E-12	4.061E-13
U-234	U-238	4.434E-13	7.410E-21	2.217E-20	5.138E-20	1.506E-19	4.094E-19	1.069E-18	1.646E-18	5.361E-19
U-234	U-238	6.383E-15	1.067E-22	3.190E-22	7.396E-22	2.168E-21	5.893E-21	1.539E-20	2.369E-20	7.716E-21
U-234	U-238	3.196E-07	5.341E-15	1.598E-14	3.703E-14	1.086E-13	2.951E-13	7.706E-13	1.186E-12	3.864E-13
U-234	U-238	4.219E-13	7.050E-21	2.109E-20	4.889E-20	1.433E-19	3.895E-19	1.017E-18	1.566E-18	5.100E-19

Summary : Residential (Town)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	1.015E-22	3.035E-22	7.037E-22	2.063E-21	5.606E-21	1.464E-20	2.254E-20	7.341E-21
U-234	U-238	6.713E-11	1.122E-18	3.356E-18	7.779E-18	2.280E-17	6.198E-17	1.619E-16	2.491E-16	8.116E-17
U-234	U-238	8.862E-17	1.481E-24	4.429E-24	1.027E-23	3.010E-23	8.181E-23	2.137E-22	3.289E-22	1.071E-22
U-234	U-238	1.276E-18	2.132E-26	6.376E-26	1.478E-25	4.332E-25	1.178E-24	3.076E-24	4.733E-24	1.542E-24
U-234	U-238	3.200E-10	5.348E-18	1.600E-17	3.708E-17	1.087E-16	2.954E-16	7.716E-16	1.188E-15	3.869E-16
U-234	U-238	4.224E-16	7.059E-24	2.111E-23	4.894E-23	1.435E-22	3.900E-22	1.018E-21	1.568E-21	5.106E-22
U-234	U-238	6.080E-18	1.016E-25	3.039E-25	7.045E-25	2.065E-24	5.613E-24	1.466E-23	2.256E-23	7.350E-24
U-234	U-238	9.980E-01	1.668E-08	4.988E-08	1.156E-07	3.390E-07	9.214E-07	2.406E-06	3.704E-06	1.206E-06
U-234	U-238	1.317E-06	2.201E-14	6.585E-14	1.526E-13	4.474E-13	1.216E-12	3.176E-12	4.889E-12	1.593E-12
U-234	U-238	1.896E-08	3.169E-16	9.478E-16	2.197E-15	6.440E-15	1.751E-14	4.572E-14	7.037E-14	2.292E-14
U-234	U-238	2.096E-04	3.503E-12	1.048E-11	2.429E-11	7.120E-11	1.935E-10	5.054E-10	7.779E-10	2.534E-10
U-234	U-238	2.767E-10	4.624E-18	1.383E-17	3.206E-17	9.398E-17	2.555E-16	6.672E-16	1.027E-15	3.345E-16
U-234	U-238	3.983E-12	6.656E-20	1.991E-19	4.615E-19	1.353E-18	3.677E-18	9.603E-18	1.478E-17	4.815E-18
U-234	U-238	1.994E-04	3.333E-12	9.969E-12	2.311E-11	6.774E-11	1.841E-10	4.809E-10	7.401E-10	2.411E-10
U-234	U-238	2.633E-10	4.399E-18	1.316E-17	3.050E-17	8.942E-17	2.430E-16	6.348E-16	9.769E-16	3.183E-16
U-234	U-238	3.789E-12	6.332E-20	1.894E-19	4.391E-19	1.287E-18	3.498E-18	9.137E-18	1.406E-17	4.581E-18
U-234	U-238	4.189E-08	7.000E-16	2.094E-15	4.854E-15	1.423E-14	3.867E-14	1.010E-13	1.555E-13	5.064E-14
U-234	U-238	5.530E-14	9.241E-22	2.764E-21	6.407E-21	1.878E-20	5.105E-20	1.333E-19	2.052E-19	6.685E-20
U-234	U-238	7.959E-16	1.330E-23	3.978E-23	9.223E-23	2.703E-22	7.348E-22	1.919E-21	2.954E-21	9.622E-22
U-234	U-238	1.997E-07	3.337E-15	9.981E-15	2.314E-14	6.782E-14	1.843E-13	4.815E-13	7.410E-13	2.414E-13
U-234	U-238	2.636E-13	4.405E-21	1.318E-20	3.054E-20	8.952E-20	2.433E-19	6.355E-19	9.781E-19	3.186E-19
U-234	U-238	3.794E-15	6.340E-23	1.896E-22	4.396E-22	1.289E-21	3.503E-21	9.148E-21	1.408E-20	4.587E-21
U-234	ΣDOSE(j)		1.184E-02	1.180E-02	1.172E-02	1.145E-02	1.072E-02	8.495E-03	4.374E-03	4.284E-04
U-234	U-234	1.899E-08	2.249E-10	2.242E-10	2.227E-10	2.176E-10	2.036E-10	1.614E-10	8.304E-11	8.117E-12
U-234	U-234	2.100E-04	2.487E-06	2.478E-06	2.462E-06	2.405E-06	2.251E-06	1.784E-06	9.180E-07	8.973E-08
U-234	ΣDOSE(j)		2.487E-06	2.479E-06	2.462E-06	2.406E-06	2.251E-06	1.784E-06	9.180E-07	8.974E-08
U-234	U-234	2.771E-10	3.283E-12	3.272E-12	3.250E-12	3.175E-12	2.971E-12	2.355E-12	1.212E-12	1.184E-13
U-234	U-234	3.989E-12	4.725E-14	4.709E-14	4.678E-14	4.570E-14	4.277E-14	3.389E-14	1.744E-14	1.705E-15
U-234	ΣDOSE(j)		3.330E-12	3.319E-12	3.297E-12	3.221E-12	3.014E-12	2.389E-12	1.229E-12	1.201E-13
U-234	U-234	1.998E-04	2.366E-06	2.358E-06	2.342E-06	2.289E-06	2.142E-06	1.697E-06	8.734E-07	8.537E-08
U-234	U-234	2.637E-10	3.123E-12	3.113E-12	3.092E-12	3.021E-12	2.827E-12	2.240E-12	1.153E-12	1.127E-13
U-234	ΣDOSE(j)		2.366E-06	2.358E-06	2.342E-06	2.289E-06	2.142E-06	1.697E-06	8.734E-07	8.537E-08
U-234	U-234	3.795E-12	4.495E-14	4.480E-14	4.451E-14	4.348E-14	4.069E-14	3.225E-14	1.659E-14	1.622E-15
U-234	U-234	4.196E-08	4.970E-10	4.953E-10	4.920E-10	4.807E-10	4.498E-10	3.565E-10	1.834E-10	1.793E-11
U-234	ΣDOSE(j)		4.970E-10	4.953E-10	4.921E-10	4.808E-10	4.499E-10	3.565E-10	1.835E-10	1.793E-11
U-234	U-234	5.538E-14	6.560E-16	6.538E-16	6.495E-16	6.345E-16	5.938E-16	4.706E-16	2.421E-16	2.367E-17
U-234	U-234	7.972E-16	9.442E-18	9.411E-18	9.348E-18	9.134E-18	8.546E-18	6.773E-18	3.485E-18	3.407E-19
U-234	ΣDOSE(j)		6.654E-16	6.632E-16	6.588E-16	6.437E-16	6.023E-16	4.773E-16	2.456E-16	2.401E-17
U-234	U-234	2.000E-07	2.369E-09	2.361E-09	2.345E-09	2.291E-09	2.144E-09	1.699E-09	8.744E-10	8.547E-11
U-234	U-234	2.640E-13	3.127E-15	3.116E-15	3.096E-15	3.025E-15	2.830E-15	2.243E-15	1.154E-15	1.128E-16
U-234	ΣDOSE(j)		2.369E-09	2.361E-09	2.345E-09	2.291E-09	2.144E-09	1.699E-09	8.744E-10	8.547E-11
U-234	U-234	3.800E-15	4.501E-17	4.486E-17	4.456E-17	4.354E-17	4.074E-17	3.229E-17	1.661E-17	1.624E-18

Summary : Residential (Town)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	5.782E-09	5.763E-09	5.725E-09	5.594E-09	5.234E-09	4.149E-09	2.136E-09	2.092E-10
U-238	U-238	1.599E-03	4.040E-03	4.027E-03	4.000E-03	3.908E-03	3.657E-03	2.899E-03	1.493E-03	1.462E-04
U-238	ΣDOSE(j)		4.040E-03	4.027E-03	4.000E-03	3.908E-03	3.657E-03	2.899E-03	1.493E-03	1.462E-04
U-238	U-238	2.111E-09	5.333E-09	5.315E-09	5.280E-09	5.159E-09	4.828E-09	3.827E-09	1.970E-09	1.930E-10
U-238	U-238	3.039E-11	7.676E-11	7.651E-11	7.600E-11	7.426E-11	6.949E-11	5.508E-11	2.836E-11	2.778E-12
U-238	ΣDOSE(j)		5.410E-09	5.392E-09	5.356E-09	5.233E-09	4.897E-09	3.882E-09	1.999E-09	1.957E-10
U-238	U-238	3.359E-07	8.486E-07	8.458E-07	8.402E-07	8.209E-07	7.682E-07	6.089E-07	3.135E-07	3.071E-08
U-238	U-238	4.434E-13	1.120E-12	1.116E-12	1.109E-12	1.084E-12	1.014E-12	8.038E-13	4.138E-13	4.053E-14
U-238	ΣDOSE(j)		8.486E-07	8.458E-07	8.402E-07	8.209E-07	7.682E-07	6.089E-07	3.135E-07	3.071E-08
U-238	U-238	6.383E-15	1.612E-14	1.607E-14	1.596E-14	1.560E-14	1.460E-14	1.157E-14	5.957E-15	5.834E-16
U-238	U-238	3.196E-07	8.074E-07	8.047E-07	7.994E-07	7.810E-07	7.309E-07	5.793E-07	2.983E-07	2.921E-08
U-238	ΣDOSE(j)		8.074E-07	8.047E-07	7.994E-07	7.810E-07	7.309E-07	5.793E-07	2.983E-07	2.921E-08
U-238	U-238	4.219E-13	1.066E-12	1.062E-12	1.055E-12	1.031E-12	9.647E-13	7.647E-13	3.937E-13	3.856E-14
U-238	U-238	6.073E-15	1.534E-14	1.529E-14	1.519E-14	1.484E-14	1.389E-14	1.101E-14	5.668E-15	5.551E-16
U-238	ΣDOSE(j)		1.081E-12	1.078E-12	1.070E-12	1.046E-12	9.786E-13	7.757E-13	3.994E-13	3.912E-14
U-238	U-238	6.713E-11	1.696E-10	1.690E-10	1.679E-10	1.641E-10	1.535E-10	1.217E-10	6.265E-11	6.136E-12
U-238	U-238	8.862E-17	2.239E-16	2.231E-16	2.216E-16	2.165E-16	2.026E-16	1.606E-16	8.270E-17	8.100E-18
U-238	ΣDOSE(j)		1.696E-10	1.690E-10	1.679E-10	1.641E-10	1.535E-10	1.217E-10	6.265E-11	6.136E-12
U-238	U-238	1.276E-18	3.222E-18	3.211E-18	3.190E-18	3.117E-18	2.917E-18	2.312E-18	1.190E-18	1.166E-19
U-238	U-238	3.200E-10	8.084E-10	8.057E-10	8.004E-10	7.820E-10	7.318E-10	5.800E-10	2.987E-10	2.925E-11
U-238	ΣDOSE(j)		8.084E-10	8.057E-10	8.004E-10	7.820E-10	7.318E-10	5.800E-10	2.987E-10	2.925E-11
U-238	U-238	4.224E-16	1.067E-15	1.064E-15	1.056E-15	1.032E-15	9.659E-16	7.657E-16	3.942E-16	3.861E-17
U-238	U-238	6.080E-18	1.536E-17	1.531E-17	1.521E-17	1.486E-17	1.390E-17	1.102E-17	5.674E-18	5.558E-19
U-238	ΣDOSE(j)		1.082E-15	1.079E-15	1.072E-15	1.047E-15	9.798E-16	7.767E-16	3.999E-16	3.917E-17
U-238	U-238	9.980E-01	5.614E-02	5.595E-02	5.558E-02	5.431E-02	5.082E-02	4.028E-02	2.074E-02	2.031E-03
U-238	U-238	1.317E-06	7.410E-08	7.386E-08	7.337E-08	7.168E-08	6.708E-08	5.317E-08	2.738E-08	2.681E-09
U-238	ΣDOSE(j)		5.614E-02	5.595E-02	5.558E-02	5.431E-02	5.082E-02	4.028E-02	2.074E-02	2.031E-03
U-238	U-238	1.896E-08	1.067E-09	1.063E-09	1.056E-09	1.032E-09	9.655E-10	7.654E-10	3.941E-10	3.859E-11
U-238	U-238	2.096E-04	1.179E-05	1.175E-05	1.167E-05	1.141E-05	1.067E-05	8.461E-06	4.356E-06	4.267E-07
U-238	ΣDOSE(j)		1.179E-05	1.175E-05	1.168E-05	1.141E-05	1.067E-05	8.462E-06	4.357E-06	4.267E-07
U-238	U-238	2.767E-10	1.556E-11	1.551E-11	1.541E-11	1.506E-11	1.409E-11	1.117E-11	5.750E-12	5.632E-13
U-238	U-238	3.983E-12	2.240E-13	2.233E-13	2.218E-13	2.167E-13	2.028E-13	1.608E-13	8.277E-14	8.107E-15
U-238	ΣDOSE(j)		1.579E-11	1.574E-11	1.563E-11	1.527E-11	1.429E-11	1.133E-11	5.833E-12	5.713E-13
U-238	U-238	1.994E-04	1.122E-05	1.118E-05	1.111E-05	1.085E-05	1.016E-05	8.050E-06	4.145E-06	4.059E-07
U-238	U-238	2.633E-10	1.481E-11	1.476E-11	1.466E-11	1.433E-11	1.341E-11	1.063E-11	5.471E-12	5.358E-13
U-238	ΣDOSE(j)		1.122E-05	1.118E-05	1.111E-05	1.085E-05	1.016E-05	8.050E-06	4.145E-06	4.059E-07
U-238	U-238	3.789E-12	2.132E-13	2.124E-13	2.110E-13	2.062E-13	1.930E-13	1.529E-13	7.875E-14	7.713E-15

Summary : Residential (Town)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	2.356E-09	2.349E-09	2.333E-09	2.279E-09	2.133E-09	1.691E-09	8.706E-10	8.526E-11
U-238	ΣDOSE(j)		2.357E-09	2.349E-09	2.333E-09	2.280E-09	2.133E-09	1.691E-09	8.707E-10	8.527E-11
U-238	U-238	5.530E-14	3.110E-15	3.100E-15	3.080E-15	3.009E-15	2.816E-15	2.232E-15	1.149E-15	1.125E-16
U-238	U-238	7.959E-16	4.477E-17	4.462E-17	4.433E-17	4.331E-17	4.053E-17	3.213E-17	1.654E-17	1.620E-18
U-238	ΣDOSE(j)		3.155E-15	3.145E-15	3.124E-15	3.052E-15	2.856E-15	2.264E-15	1.166E-15	1.142E-16
U-238	U-238	1.997E-07	1.123E-08	1.119E-08	1.112E-08	1.087E-08	1.017E-08	8.060E-09	4.150E-09	4.064E-10
U-238	U-238	2.636E-13	1.483E-14	1.478E-14	1.468E-14	1.434E-14	1.342E-14	1.064E-14	5.478E-15	5.365E-16
U-238	ΣDOSE(j)		1.123E-08	1.119E-08	1.112E-08	1.087E-08	1.017E-08	8.060E-09	4.150E-09	4.064E-10
U-238	U-238	3.794E-15	2.134E-16	2.127E-16	2.113E-16	2.064E-16	1.932E-16	1.531E-16	7.885E-17	7.722E-18

THF(i) is the thread fraction of the parent nuclide.

Summary : Residential (Town)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	1.000E+00	9.676E-01	9.061E-01	7.197E-01	3.728E-01	3.731E-02	5.192E-05	5.222E-15
Pb-210	Pb-210	1.320E-06	1.320E-06	1.277E-06	1.196E-06	9.501E-07	4.922E-07	4.924E-08	6.854E-11	6.893E-21
Pb-210	Ra-226	9.996E-01	0.000E+00	3.066E-02	8.878E-02	2.621E-01	5.669E-01	7.450E-01	4.470E-01	6.266E-02
Pb-210	Ra-226	2.100E-04	0.000E+00	6.440E-06	1.865E-05	5.505E-05	1.191E-04	1.565E-04	9.388E-05	1.316E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	6.127E-06	1.774E-05	5.237E-05	1.133E-04	1.489E-04	8.932E-05	1.252E-05
Pb-210	Ra-226	4.196E-08	0.000E+00	1.287E-09	3.727E-09	1.100E-08	2.380E-08	3.127E-08	1.876E-08	2.630E-09
Pb-210	Ra-226	2.000E-07	0.000E+00	6.134E-09	1.776E-08	5.244E-08	1.134E-07	1.491E-07	8.943E-08	1.254E-08
Pb-210	Th-230	9.996E-01	0.000E+00	6.681E-06	5.872E-05	6.018E-04	4.360E-03	2.602E-02	7.734E-02	1.357E-01
Pb-210	Th-230	2.100E-04	0.000E+00	1.403E-09	1.233E-08	1.264E-07	9.158E-07	5.466E-06	1.624E-05	2.850E-05
Pb-210	Th-230	1.998E-04	0.000E+00	1.335E-09	1.174E-08	1.203E-07	8.713E-07	5.200E-06	1.546E-05	2.712E-05
Pb-210	Th-230	4.196E-08	0.000E+00	2.804E-13	2.465E-12	2.526E-11	1.830E-10	1.092E-09	3.246E-09	5.696E-09
Pb-210	Th-230	2.000E-07	0.000E+00	1.337E-12	1.175E-11	1.204E-10	8.724E-10	5.206E-09	1.547E-08	2.715E-08
Pb-210	U-234	9.996E-01	0.000E+00	2.052E-11	5.434E-10	1.883E-08	4.240E-07	9.087E-06	8.090E-05	3.195E-04
Pb-210	U-234	2.100E-04	0.000E+00	4.310E-15	1.141E-13	3.955E-12	8.905E-11	1.909E-09	1.699E-08	6.712E-08
Pb-210	U-234	1.998E-04	0.000E+00	4.101E-15	1.086E-13	3.763E-12	8.473E-11	1.816E-09	1.617E-08	6.386E-08
Pb-210	U-234	4.196E-08	0.000E+00	8.614E-19	2.281E-17	7.903E-16	1.780E-14	3.814E-13	3.396E-12	1.341E-11
Pb-210	U-234	2.000E-07	0.000E+00	4.106E-18	1.087E-16	3.767E-15	8.483E-14	1.818E-12	1.619E-11	6.394E-11
Pb-210	U-238	1.599E-03	0.000E+00	2.320E-20	1.848E-18	2.153E-16	1.486E-14	1.116E-12	3.044E-11	3.212E-10
Pb-210	U-238	3.359E-07	0.000E+00	4.874E-24	3.882E-22	4.522E-20	3.121E-18	2.343E-16	6.394E-15	6.746E-14
Pb-210	U-238	3.196E-07	0.000E+00	4.637E-24	3.693E-22	4.302E-20	2.970E-18	2.229E-16	6.084E-15	6.419E-14
Pb-210	U-238	6.713E-11	0.000E+00	9.740E-28	7.758E-26	9.036E-24	6.238E-22	4.683E-20	1.278E-18	1.348E-17
Pb-210	U-238	3.200E-10	0.000E+00	4.643E-27	3.698E-25	4.307E-23	2.973E-21	2.232E-19	6.091E-18	6.426E-17
Pb-210	U-238	9.980E-01	0.000E+00	1.448E-17	1.153E-15	1.343E-13	9.273E-12	6.961E-10	1.900E-08	2.004E-07
Pb-210	U-238	2.096E-04	0.000E+00	3.041E-21	2.422E-19	2.822E-17	1.948E-15	1.462E-13	3.990E-12	4.210E-11
Pb-210	U-238	1.994E-04	0.000E+00	2.894E-21	2.305E-19	2.685E-17	1.853E-15	1.391E-13	3.796E-12	4.005E-11
Pb-210	U-238	4.189E-08	0.000E+00	6.078E-25	4.841E-23	5.639E-21	3.893E-19	2.922E-17	7.974E-16	8.413E-15
Pb-210	U-238	1.997E-07	0.000E+00	2.897E-24	2.308E-22	2.688E-20	1.855E-18	1.393E-16	3.801E-15	4.010E-14
Pb-210	ΣS(j):		1.000E+00	9.983E-01	9.949E-01	9.825E-01	9.444E-01	8.086E-01	5.246E-01	1.988E-01
Po-210	Pb-210	1.000E+00	0.000E+00	8.172E-01	9.104E-01	7.263E-01	3.763E-01	3.765E-02	5.240E-05	5.269E-15
Po-210	Po-210	1.000E+00	1.000E+00	1.579E-01	3.935E-03	9.623E-09	8.911E-25	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	0.000E+00	1.660E-02	7.271E-02	2.479E-01	5.564E-01	7.389E-01	4.437E-01	6.220E-02
Po-210	Ra-226	2.100E-04	0.000E+00	3.486E-06	1.527E-05	5.206E-05	1.169E-04	1.552E-04	9.319E-05	1.307E-05
Po-210	Ra-226	1.998E-04	0.000E+00	3.317E-06	1.453E-05	4.953E-05	1.112E-04	1.477E-04	8.867E-05	1.243E-05
Po-210	Ra-226	4.196E-08	0.000E+00	6.967E-10	3.052E-09	1.040E-08	2.336E-08	3.101E-08	1.862E-08	2.611E-09
Po-210	Ra-226	2.000E-07	0.000E+00	3.321E-09	1.455E-08	4.959E-08	1.113E-07	1.478E-07	8.877E-08	1.245E-08
Po-210	Th-230	9.996E-01	0.000E+00	2.726E-06	4.114E-05	5.383E-04	4.191E-03	2.562E-02	7.655E-02	1.345E-01
Po-210	Th-230	2.100E-04	0.000E+00	5.727E-10	8.641E-09	1.131E-07	8.803E-07	5.381E-06	1.608E-05	2.825E-05
Po-210	Th-230	1.998E-04	0.000E+00	5.448E-10	8.221E-09	1.076E-07	8.375E-07	5.120E-06	1.530E-05	2.687E-05
Po-210	Th-230	4.196E-08	0.000E+00	1.144E-13	1.727E-12	2.260E-11	1.759E-10	1.075E-09	3.213E-09	5.645E-09
Po-210	Th-230	2.000E-07	0.000E+00	5.455E-13	8.231E-12	1.077E-10	8.386E-10	5.126E-09	1.532E-08	2.691E-08
Po-210	U-234	9.996E-01	0.000E+00	6.770E-12	3.343E-10	1.601E-08	4.001E-07	8.895E-06	7.995E-05	3.166E-04
Po-210	U-234	2.100E-04	0.000E+00	1.422E-15	7.021E-14	3.363E-12	8.403E-11	1.868E-09	1.679E-08	6.650E-08
Po-210	U-234	1.998E-04	0.000E+00	1.353E-15	6.680E-14	3.199E-12	7.995E-11	1.778E-09	1.598E-08	6.327E-08
Po-210	U-234	4.196E-08	0.000E+00	2.842E-19	1.403E-17	6.720E-16	1.679E-14	3.734E-13	3.356E-12	1.329E-11
Po-210	U-234	2.000E-07	0.000E+00	1.355E-18	6.688E-17	3.203E-15	8.005E-14	1.780E-12	1.600E-11	6.335E-11
Po-210	U-238	1.599E-03	0.000E+00	6.444E-21	1.016E-18	1.745E-16	1.378E-14	1.086E-12	3.003E-11	3.181E-10
Po-210	U-238	3.359E-07	0.000E+00	1.353E-24	2.133E-22	3.666E-20	2.893E-18	2.281E-16	6.308E-15	6.682E-14
Po-210	U-238	3.196E-07	0.000E+00	1.288E-24	2.030E-22	3.487E-20	2.753E-18	2.170E-16	6.002E-15	6.358E-14

Summary : Residential (Town)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	0.000E+00	2.705E-28	4.263E-26	7.325E-24	5.782E-22	4.558E-20	1.261E-18	1.335E-17
Po-210	U-238	3.200E-10	0.000E+00	1.289E-27	2.032E-25	3.492E-23	2.756E-21	2.173E-19	6.009E-18	6.366E-17
Po-210	U-238	9.980E-01	0.000E+00	4.021E-18	6.337E-16	1.089E-13	8.596E-12	6.776E-10	1.874E-08	1.985E-07
Po-210	U-238	2.096E-04	0.000E+00	8.445E-22	1.331E-19	2.287E-17	1.806E-15	1.423E-13	3.936E-12	4.170E-11
Po-210	U-238	1.994E-04	0.000E+00	8.035E-22	1.266E-19	2.176E-17	1.718E-15	1.354E-13	3.745E-12	3.967E-11
Po-210	U-238	4.189E-08	0.000E+00	1.688E-25	2.660E-23	4.571E-21	3.608E-19	2.844E-17	7.866E-16	8.333E-15
Po-210	U-238	1.997E-07	0.000E+00	8.045E-25	1.268E-22	2.179E-20	1.720E-18	1.356E-16	3.750E-15	3.972E-14
Po-210	ΣS(j):		1.000E+00	9.917E-01	9.871E-01	9.748E-01	9.371E-01	8.024E-01	5.206E-01	1.971E-01
Pb-210	Pb-210	1.900E-08	1.900E-08	1.839E-08	1.722E-08	1.368E-08	7.084E-09	7.088E-10	9.865E-13	9.921E-23
Pb-210	Ra-226	1.899E-08	0.000E+00	5.825E-10	1.687E-09	4.979E-09	1.077E-08	1.415E-08	8.492E-09	1.191E-09
Pb-210	Ra-226	3.989E-12	0.000E+00	1.224E-13	3.543E-13	1.046E-12	2.263E-12	2.973E-12	1.784E-12	2.501E-13
Pb-210	Ra-226	3.795E-12	0.000E+00	1.164E-13	3.371E-13	9.951E-13	2.153E-12	2.829E-12	1.697E-12	2.379E-13
Pb-210	Ra-226	7.972E-16	0.000E+00	2.445E-17	7.080E-17	2.090E-16	4.521E-16	5.941E-16	3.565E-16	4.997E-17
Pb-210	Ra-226	3.800E-15	0.000E+00	1.166E-16	3.375E-16	9.963E-16	2.155E-15	2.832E-15	1.699E-15	2.382E-16
Pb-210	Th-230	1.899E-08	0.000E+00	1.269E-13	1.116E-12	1.143E-11	8.284E-11	4.944E-10	1.469E-09	2.578E-09
Pb-210	Th-230	3.989E-12	0.000E+00	2.666E-17	2.344E-16	2.402E-15	1.740E-14	1.038E-13	3.087E-13	5.415E-13
Pb-210	Th-230	3.795E-12	0.000E+00	2.537E-17	2.230E-16	2.285E-15	1.656E-14	9.880E-14	2.937E-13	5.152E-13
Pb-210	Th-230	7.972E-16	0.000E+00	5.328E-21	4.683E-20	4.800E-19	3.477E-18	2.075E-17	6.168E-17	1.082E-16
Pb-210	Th-230	3.800E-15	0.000E+00	2.540E-20	2.232E-19	2.288E-18	1.658E-17	9.892E-17	2.940E-16	5.158E-16
Pb-210	U-234	1.899E-08	0.000E+00	3.899E-19	1.033E-17	3.577E-16	8.056E-15	1.727E-13	1.537E-12	6.071E-12
Pb-210	U-234	3.989E-12	0.000E+00	8.189E-23	2.169E-21	7.514E-20	1.692E-18	3.627E-17	3.229E-16	1.275E-15
Pb-210	U-234	3.795E-12	0.000E+00	7.792E-23	2.063E-21	7.149E-20	1.610E-18	3.450E-17	3.072E-16	1.213E-15
Pb-210	U-234	7.972E-16	0.000E+00	1.637E-26	4.334E-25	1.502E-23	3.381E-22	7.247E-21	6.452E-20	2.548E-19
Pb-210	U-234	3.800E-15	0.000E+00	7.801E-26	2.066E-24	7.158E-23	1.612E-21	3.455E-20	3.076E-19	1.215E-18
Pb-210	U-238	3.039E-11	0.000E+00	4.409E-28	3.512E-26	4.090E-24	2.824E-22	2.120E-20	5.784E-19	6.103E-18
Pb-210	U-238	6.383E-15	0.000E+00	9.261E-32	7.376E-30	8.592E-28	5.931E-26	4.452E-24	1.215E-22	1.282E-21
Pb-210	U-238	6.073E-15	0.000E+00	8.811E-32	7.018E-30	8.174E-28	5.643E-26	4.236E-24	1.156E-22	1.220E-21
Pb-210	U-238	1.276E-18	0.000E+00	1.851E-35	1.474E-33	1.717E-31	1.185E-29	8.897E-28	2.428E-26	2.562E-25
Pb-210	U-238	6.080E-18	0.000E+00	8.821E-35	7.026E-33	8.184E-31	5.650E-29	4.241E-27	1.157E-25	1.221E-24
Pb-210	U-238	1.896E-08	0.000E+00	2.751E-25	2.191E-23	2.552E-21	1.762E-19	1.323E-17	3.609E-16	3.808E-15
Pb-210	U-238	3.983E-12	0.000E+00	5.779E-29	4.603E-27	5.361E-25	3.701E-23	2.778E-21	7.581E-20	7.999E-19
Pb-210	U-238	3.789E-12	0.000E+00	5.498E-29	4.379E-27	5.101E-25	3.521E-23	2.643E-21	7.213E-20	7.610E-19
Pb-210	U-238	7.959E-16	0.000E+00	1.155E-32	9.198E-31	1.071E-28	7.396E-27	5.552E-25	1.515E-23	1.598E-22
Pb-210	U-238	3.794E-15	0.000E+00	5.505E-32	4.384E-30	5.107E-28	3.525E-26	2.646E-24	7.222E-23	7.619E-22
Pb-210	ΣS(j):		1.900E-08	1.897E-08	1.890E-08	1.867E-08	1.794E-08	1.536E-08	9.968E-09	3.776E-09
Ra-226	Ra-226	9.996E-01	9.996E-01	9.968E-01	9.912E-01	9.719E-01	9.189E-01	7.550E-01	4.306E-01	6.037E-02
Ra-226	Ra-226	1.319E-06	1.319E-06	1.316E-06	1.308E-06	1.283E-06	1.213E-06	9.965E-07	5.684E-07	7.968E-08
Ra-226	Th-230	9.996E-01	0.000E+00	4.324E-04	1.294E-03	4.270E-03	1.246E-02	3.773E-02	8.763E-02	1.437E-01
Ra-226	Th-230	1.319E-06	0.000E+00	5.708E-10	1.708E-09	5.636E-09	1.644E-08	4.981E-08	1.157E-07	1.897E-07
Ra-226	Th-230	1.899E-08	0.000E+00	8.216E-12	2.458E-11	8.113E-11	2.367E-10	7.169E-10	1.665E-09	2.731E-09
Ra-226	U-234	9.996E-01	0.000E+00	1.987E-09	1.781E-08	1.951E-07	1.686E-06	1.627E-05	9.938E-05	3.425E-04
Ra-226	U-234	1.319E-06	0.000E+00	2.623E-15	2.351E-14	2.575E-13	2.225E-12	2.147E-11	1.312E-10	4.521E-10
Ra-226	U-234	1.899E-08	0.000E+00	3.775E-17	3.384E-16	3.706E-15	3.203E-14	3.091E-13	1.888E-12	6.508E-12
Ra-226	U-238	1.599E-03	0.000E+00	2.991E-18	8.038E-17	2.928E-15	7.542E-14	2.371E-12	4.053E-11	3.504E-10
Ra-226	U-238	2.111E-09	0.000E+00	3.948E-24	1.061E-22	3.865E-21	9.955E-20	3.130E-18	5.351E-17	4.625E-16
Ra-226	U-238	3.039E-11	0.000E+00	5.683E-26	1.527E-24	5.563E-23	1.433E-21	4.505E-20	7.701E-19	6.657E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.866E-15	5.015E-14	1.827E-12	4.706E-11	1.480E-09	2.529E-08	2.186E-07

Summary : Residential (Town)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	0.000E+00	2.464E-21	6.620E-20	2.412E-18	6.212E-17	1.953E-15	3.339E-14	2.886E-13
Ra-226	U-238	1.896E-08	0.000E+00	3.546E-23	9.529E-22	3.471E-20	8.941E-19	2.811E-17	4.806E-16	4.154E-15
Ra-226	ΣS(j):		9.996E-01	9.972E-01	9.925E-01	9.762E-01	9.313E-01	7.927E-01	5.184E-01	2.044E-01
Pb-210	Ra-226	1.319E-06	0.000E+00	4.047E-08	1.172E-07	3.459E-07	7.484E-07	9.833E-07	5.900E-07	8.271E-08
Pb-210	Ra-226	2.771E-10	0.000E+00	8.501E-12	2.461E-11	7.266E-11	1.572E-10	2.065E-10	1.239E-10	1.737E-11
Pb-210	Ra-226	2.637E-10	0.000E+00	8.088E-12	2.342E-11	6.913E-11	1.496E-10	1.965E-10	1.179E-10	1.653E-11
Pb-210	Ra-226	5.538E-14	0.000E+00	1.699E-15	4.919E-15	1.452E-14	3.141E-14	4.128E-14	2.476E-14	3.472E-15
Pb-210	Ra-226	2.640E-13	0.000E+00	8.097E-15	2.345E-14	6.922E-14	1.497E-13	1.967E-13	1.180E-13	1.655E-14
Pb-210	Th-230	1.319E-06	0.000E+00	8.818E-12	7.752E-11	7.944E-10	5.755E-09	3.435E-08	1.021E-07	1.791E-07
Pb-210	Th-230	2.771E-10	0.000E+00	1.852E-15	1.628E-14	1.669E-13	1.209E-12	7.215E-12	2.144E-11	3.762E-11
Pb-210	Th-230	2.637E-10	0.000E+00	1.762E-15	1.549E-14	1.588E-13	1.150E-12	6.864E-12	2.040E-11	3.579E-11
Pb-210	Th-230	5.538E-14	0.000E+00	3.702E-19	3.254E-18	3.335E-17	2.416E-16	1.442E-15	4.285E-15	7.518E-15
Pb-210	Th-230	2.640E-13	0.000E+00	1.764E-18	1.551E-17	1.589E-16	1.152E-15	6.872E-15	2.043E-14	3.584E-14
Pb-210	U-234	1.319E-06	0.000E+00	2.709E-17	7.173E-16	2.485E-14	5.597E-13	1.200E-11	1.068E-10	4.218E-10
Pb-210	U-234	2.771E-10	0.000E+00	5.689E-21	1.507E-19	5.220E-18	1.176E-16	2.519E-15	2.243E-14	8.860E-14
Pb-210	U-234	2.637E-10	0.000E+00	5.413E-21	1.433E-19	4.967E-18	1.118E-16	2.397E-15	2.134E-14	8.429E-14
Pb-210	U-234	5.538E-14	0.000E+00	1.137E-24	3.011E-23	1.043E-21	2.349E-20	5.035E-19	4.483E-18	1.771E-17
Pb-210	U-234	2.640E-13	0.000E+00	5.420E-24	1.435E-22	4.973E-21	1.120E-19	2.400E-18	2.137E-17	8.439E-17
Pb-210	U-238	2.111E-09	0.000E+00	3.063E-26	2.440E-24	2.842E-22	1.962E-20	1.473E-18	4.019E-17	4.240E-16
Pb-210	U-238	4.434E-13	0.000E+00	6.434E-30	5.124E-28	5.969E-26	4.120E-24	3.093E-22	8.441E-21	8.905E-20
Pb-210	U-238	4.219E-13	0.000E+00	6.121E-30	4.875E-28	5.679E-26	3.920E-24	2.943E-22	8.031E-21	8.473E-20
Pb-210	U-238	8.862E-17	0.000E+00	1.286E-33	1.024E-31	1.193E-29	8.234E-28	6.181E-26	1.687E-24	1.780E-23
Pb-210	U-238	4.224E-16	0.000E+00	6.129E-33	4.881E-31	5.686E-29	3.925E-27	2.946E-25	8.040E-24	8.483E-23
Pb-210	U-238	1.317E-06	0.000E+00	1.911E-23	1.522E-21	1.773E-19	1.224E-17	9.189E-16	2.508E-14	2.646E-13
Pb-210	U-238	2.767E-10	0.000E+00	4.015E-27	3.198E-25	3.725E-23	2.571E-21	1.930E-19	5.267E-18	5.557E-17
Pb-210	U-238	2.633E-10	0.000E+00	3.820E-27	3.042E-25	3.544E-23	2.446E-21	1.836E-19	5.011E-18	5.287E-17
Pb-210	U-238	5.530E-14	0.000E+00	8.023E-31	6.390E-29	7.443E-27	5.138E-25	3.857E-23	1.053E-21	1.110E-20
Pb-210	U-238	2.636E-13	0.000E+00	3.824E-30	3.046E-28	3.548E-26	2.449E-24	1.838E-22	5.017E-21	5.293E-20
Pb-210	ΣS(j):		0.000E+00	4.050E-08	1.173E-07	3.469E-07	7.544E-07	1.018E-06	6.925E-07	2.624E-07
Ra-226	Ra-226	1.899E-08	1.899E-08	1.894E-08	1.883E-08	1.847E-08	1.746E-08	1.434E-08	8.182E-09	1.147E-09
Ra-226	Ra-226	2.100E-04	2.100E-04	2.094E-04	2.082E-04	2.041E-04	1.930E-04	1.586E-04	9.045E-05	1.268E-05
Ra-226	ΣS(j):		2.100E-04	2.094E-04	2.082E-04	2.042E-04	1.930E-04	1.586E-04	9.046E-05	1.268E-05
Ra-226	Ra-226	2.771E-10	2.771E-10	2.764E-10	2.748E-10	2.695E-10	2.548E-10	2.093E-10	1.194E-10	1.674E-11
Ra-226	Ra-226	3.989E-12	3.989E-12	3.978E-12	3.956E-12	3.879E-12	3.667E-12	3.013E-12	1.719E-12	2.409E-13
Ra-226	ΣS(j):		2.811E-10	2.803E-10	2.788E-10	2.734E-10	2.584E-10	2.123E-10	1.211E-10	1.698E-11
Ra-226	Ra-226	1.998E-04	1.998E-04	1.992E-04	1.981E-04	1.942E-04	1.836E-04	1.509E-04	8.606E-05	1.206E-05
Ra-226	Ra-226	2.637E-10	2.637E-10	2.629E-10	2.615E-10	2.564E-10	2.424E-10	1.991E-10	1.136E-10	1.592E-11
Ra-226	Th-230	1.998E-04	0.000E+00	8.642E-08	2.585E-07	8.533E-07	2.489E-06	7.541E-06	1.751E-05	2.872E-05
Ra-226	Th-230	2.637E-10	0.000E+00	1.141E-13	3.412E-13	1.126E-12	3.286E-12	9.954E-12	2.312E-11	3.792E-11
Ra-226	Th-230	3.795E-12	0.000E+00	1.642E-15	4.912E-15	1.621E-14	4.730E-14	1.433E-13	3.327E-13	5.458E-13
Ra-226	U-234	1.998E-04	0.000E+00	3.971E-13	3.559E-12	3.898E-11	3.368E-10	3.251E-09	1.986E-08	6.845E-08
Ra-226	U-234	2.637E-10	0.000E+00	5.241E-19	4.698E-18	5.146E-17	4.446E-16	4.291E-15	2.622E-14	9.036E-14
Ra-226	U-234	3.795E-12	0.000E+00	7.544E-21	6.762E-20	7.407E-19	6.400E-18	6.177E-17	3.773E-16	1.301E-15
Ra-226	U-238	3.196E-07	0.000E+00	5.977E-22	1.606E-20	5.851E-19	1.507E-17	4.739E-16	8.100E-15	7.002E-14
Ra-226	U-238	4.219E-13	0.000E+00	7.890E-28	2.120E-26	7.724E-25	1.989E-23	6.255E-22	1.069E-20	9.243E-20

Summary : Residential (Town)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	0.000E+00	1.136E-29	3.052E-28	1.112E-26	2.864E-25	9.003E-24	1.539E-22	1.330E-21
Ra-226	U-238	1.994E-04	0.000E+00	3.730E-19	1.002E-17	3.651E-16	9.404E-15	2.957E-13	5.055E-12	4.369E-11
Ra-226	U-238	2.633E-10	0.000E+00	4.923E-25	1.323E-23	4.820E-22	1.241E-20	3.903E-19	6.672E-18	5.768E-17
Ra-226	U-238	3.789E-12	0.000E+00	7.087E-27	1.904E-25	6.937E-24	1.787E-22	5.618E-21	9.604E-20	8.302E-19
Ra-226	ΣS(j):		1.998E-04	1.993E-04	1.983E-04	1.951E-04	1.861E-04	1.584E-04	1.036E-04	4.086E-05
Ra-226	Ra-226	3.795E-12	3.795E-12	3.785E-12	3.764E-12	3.690E-12	3.489E-12	2.867E-12	1.635E-12	2.292E-13
Ra-226	Ra-226	4.196E-08	4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	ΣS(j):		4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	Ra-226	5.538E-14	5.538E-14	5.523E-14	5.492E-14	5.385E-14	5.091E-14	4.183E-14	2.386E-14	3.345E-15
Ra-226	Ra-226	7.972E-16	7.972E-16	7.950E-16	7.905E-16	7.751E-16	7.328E-16	6.021E-16	3.434E-16	4.814E-17
Ra-226	ΣS(j):		5.618E-14	5.602E-14	5.571E-14	5.463E-14	5.164E-14	4.243E-14	2.420E-14	3.393E-15
Ra-226	Ra-226	2.000E-07	2.000E-07	1.994E-07	1.983E-07	1.945E-07	1.838E-07	1.511E-07	8.616E-08	1.208E-08
Ra-226	Ra-226	2.640E-13	2.640E-13	2.633E-13	2.618E-13	2.567E-13	2.427E-13	1.994E-13	1.137E-13	1.594E-14
Ra-226	Th-230	2.000E-07	0.000E+00	8.652E-11	2.588E-10	8.543E-10	2.492E-09	7.550E-09	1.753E-08	2.876E-08
Ra-226	Th-230	2.640E-13	0.000E+00	1.142E-16	3.417E-16	1.128E-15	3.290E-15	9.966E-15	2.314E-14	3.796E-14
Ra-226	Th-230	3.800E-15	0.000E+00	1.644E-18	4.918E-18	1.623E-17	4.736E-17	1.434E-16	3.331E-16	5.464E-16
Ra-226	U-234	2.000E-07	0.000E+00	3.975E-16	3.563E-15	3.903E-14	3.372E-13	3.255E-12	1.988E-11	6.853E-11
Ra-226	U-234	2.640E-13	0.000E+00	5.248E-22	4.704E-21	5.152E-20	4.452E-19	4.296E-18	2.625E-17	9.046E-17
Ra-226	U-234	3.800E-15	0.000E+00	7.553E-24	6.770E-23	7.416E-22	6.408E-21	6.184E-20	3.778E-19	1.302E-18
Ra-226	U-238	3.200E-10	0.000E+00	5.984E-25	1.608E-23	5.858E-22	1.509E-20	4.744E-19	8.110E-18	7.011E-17
Ra-226	U-238	4.224E-16	0.000E+00	7.899E-31	2.123E-29	7.733E-28	1.992E-26	6.262E-25	1.071E-23	9.254E-23
Ra-226	U-238	6.080E-18	0.000E+00	1.137E-32	3.056E-31	1.113E-29	2.867E-28	9.014E-27	1.541E-25	1.332E-24
Ra-226	U-238	1.997E-07	0.000E+00	3.734E-22	1.003E-20	3.656E-19	9.416E-18	2.960E-16	5.061E-15	4.375E-14
Ra-226	U-238	2.636E-13	0.000E+00	4.929E-28	1.325E-26	4.826E-25	1.243E-23	3.908E-22	6.680E-21	5.775E-20
Ra-226	U-238	3.794E-15	0.000E+00	7.095E-30	1.907E-28	6.946E-27	1.789E-25	5.625E-24	9.615E-23	8.312E-22
Ra-226	ΣS(j):		2.000E-07	1.995E-07	1.986E-07	1.953E-07	1.863E-07	1.586E-07	1.037E-07	4.091E-08
Ra-226	Ra-226	3.800E-15	3.800E-15	3.789E-15	3.768E-15	3.695E-15	3.493E-15	2.870E-15	1.637E-15	2.295E-16
Th-230	Th-230	9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.984E-01	9.960E-01	9.877E-01
Th-230	Th-230	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.318E-06	1.315E-06	1.304E-06
Th-230	U-234	9.996E-01	0.000E+00	9.176E-06	2.744E-05	9.040E-05	2.624E-04	7.816E-04	1.742E-03	2.644E-03
Th-230	U-234	1.319E-06	0.000E+00	1.211E-11	3.622E-11	1.193E-10	3.464E-10	1.032E-09	2.299E-09	3.490E-09
Th-230	U-234	1.899E-08	0.000E+00	1.743E-13	5.213E-13	1.718E-12	4.986E-12	1.485E-11	3.310E-11	5.023E-11
Th-230	U-234	2.100E-04	0.000E+00	1.927E-09	5.763E-09	1.899E-08	5.512E-08	1.642E-07	3.659E-07	5.553E-07
Th-230	U-234	2.771E-10	0.000E+00	2.544E-15	7.607E-15	2.506E-14	7.275E-14	2.167E-13	4.830E-13	7.330E-13
Th-230	U-234	3.989E-12	0.000E+00	3.662E-17	1.095E-16	3.608E-16	1.047E-15	3.119E-15	6.952E-15	1.055E-14
Th-230	U-234	1.998E-04	0.000E+00	1.834E-09	5.483E-09	1.807E-08	5.244E-08	1.562E-07	3.481E-07	5.283E-07
Th-230	U-234	2.637E-10	0.000E+00	2.421E-15	7.238E-15	2.385E-14	6.922E-14	2.062E-13	4.595E-13	6.974E-13
Th-230	U-234	3.795E-12	0.000E+00	3.484E-17	1.042E-16	3.432E-16	9.963E-16	2.968E-15	6.614E-15	1.004E-14
Th-230	U-234	4.196E-08	0.000E+00	3.852E-13	1.152E-12	3.795E-12	1.101E-11	3.281E-11	7.312E-11	1.110E-10
Th-230	U-234	5.538E-14	0.000E+00	5.084E-19	1.520E-18	5.009E-18	1.454E-17	4.331E-17	9.651E-17	1.465E-16
Th-230	U-234	7.972E-16	0.000E+00	7.318E-21	2.188E-20	7.210E-20	2.093E-19	6.233E-19	1.389E-18	2.108E-18
Th-230	U-234	2.000E-07	0.000E+00	1.836E-12	5.490E-12	1.809E-11	5.250E-11	1.564E-10	3.485E-10	5.290E-10
Th-230	U-234	2.640E-13	0.000E+00	2.424E-18	7.246E-18	2.388E-17	6.930E-17	2.064E-16	4.601E-16	6.982E-16
Th-230	U-234	3.800E-15	0.000E+00	3.488E-20	1.043E-19	3.437E-19	9.975E-19	2.971E-18	6.622E-18	1.005E-17

Summary : Residential (Town)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	0.000E+00	2.072E-14	1.856E-13	2.031E-12	1.749E-11	1.668E-10	9.884E-10	3.158E-09
Th-230	U-238	2.111E-09	0.000E+00	2.734E-20	2.450E-19	2.680E-18	2.308E-17	2.202E-16	1.305E-15	4.168E-15
Th-230	U-238	3.039E-11	0.000E+00	3.936E-22	3.527E-21	3.858E-20	3.323E-19	3.170E-18	1.878E-17	5.999E-17
Th-230	U-238	3.359E-07	0.000E+00	4.351E-18	3.899E-17	4.265E-16	3.673E-15	3.504E-14	2.076E-13	6.632E-13
Th-230	U-238	4.434E-13	0.000E+00	5.743E-24	5.146E-23	5.630E-22	4.848E-21	4.626E-20	2.740E-19	8.754E-19
Th-230	U-238	6.383E-15	0.000E+00	8.267E-26	7.408E-25	8.104E-24	6.979E-23	6.658E-22	3.945E-21	1.260E-20
Th-230	U-238	3.196E-07	0.000E+00	4.140E-18	3.709E-17	4.058E-16	3.495E-15	3.334E-14	1.975E-13	6.310E-13
Th-230	U-238	4.219E-13	0.000E+00	5.464E-24	4.896E-23	5.357E-22	4.613E-21	4.401E-20	2.607E-19	8.329E-19
Th-230	U-238	6.073E-15	0.000E+00	7.866E-26	7.048E-25	7.710E-24	6.640E-23	6.335E-22	3.753E-21	1.199E-20
Th-230	U-238	6.713E-11	0.000E+00	8.695E-22	7.791E-21	8.524E-20	7.340E-19	7.003E-18	4.149E-17	1.325E-16
Th-230	U-238	8.862E-17	0.000E+00	1.148E-27	1.028E-26	1.125E-25	9.689E-25	9.244E-24	5.476E-23	1.749E-22
Th-230	U-238	1.276E-18	0.000E+00	1.652E-29	1.480E-28	1.620E-27	1.395E-26	1.331E-25	7.883E-25	2.518E-24
Th-230	U-238	3.200E-10	0.000E+00	4.145E-21	3.714E-20	4.063E-19	3.499E-18	3.338E-17	1.978E-16	6.318E-16
Th-230	U-238	4.224E-16	0.000E+00	5.471E-27	4.902E-26	5.363E-25	4.619E-24	4.406E-23	2.610E-22	8.339E-22
Th-230	U-238	6.080E-18	0.000E+00	7.875E-29	7.056E-28	7.720E-27	6.648E-26	6.342E-25	3.757E-24	1.200E-23
Th-230	U-238	9.980E-01	0.000E+00	1.293E-11	1.158E-10	1.267E-09	1.091E-08	1.041E-07	6.168E-07	1.970E-06
Th-230	U-238	1.317E-06	0.000E+00	1.706E-17	1.529E-16	1.673E-15	1.440E-14	1.374E-13	8.141E-13	2.601E-12
Th-230	U-238	1.896E-08	0.000E+00	2.456E-19	2.201E-18	2.408E-17	2.073E-16	1.978E-15	1.172E-14	3.744E-14
Th-230	U-238	2.096E-04	0.000E+00	2.715E-15	2.433E-14	2.662E-13	2.292E-12	2.187E-11	1.295E-10	4.138E-10
Th-230	U-238	2.767E-10	0.000E+00	3.584E-21	3.211E-20	3.513E-19	3.025E-18	2.886E-17	1.710E-16	5.463E-16
Th-230	U-238	3.983E-12	0.000E+00	5.159E-23	4.622E-22	5.057E-21	4.355E-20	4.155E-19	2.461E-18	7.863E-18
Th-230	U-238	1.994E-04	0.000E+00	2.583E-15	2.315E-14	2.532E-13	2.181E-12	2.080E-11	1.233E-10	3.937E-10
Th-230	U-238	2.633E-10	0.000E+00	3.410E-21	3.055E-20	3.343E-19	2.878E-18	2.746E-17	1.627E-16	5.197E-16
Th-230	U-238	3.789E-12	0.000E+00	4.908E-23	4.398E-22	4.811E-21	4.143E-20	3.953E-19	2.342E-18	7.481E-18
Th-230	U-238	4.189E-08	0.000E+00	5.426E-19	4.862E-18	5.319E-17	4.580E-16	4.370E-15	2.589E-14	8.270E-14
Th-230	U-238	5.530E-14	0.000E+00	7.162E-25	6.417E-24	7.021E-23	6.046E-22	5.768E-21	3.417E-20	1.092E-19
Th-230	U-238	7.959E-16	0.000E+00	1.031E-26	9.237E-26	1.011E-24	8.703E-24	8.303E-23	4.919E-22	1.571E-21
Th-230	U-238	1.997E-07	0.000E+00	2.586E-18	2.317E-17	2.535E-16	2.183E-15	2.083E-14	1.234E-13	3.942E-13
Th-230	U-238	2.636E-13	0.000E+00	3.414E-24	3.059E-23	3.347E-22	2.882E-21	2.749E-20	1.629E-19	5.204E-19
Th-230	U-238	3.794E-15	0.000E+00	4.914E-26	4.403E-25	4.817E-24	4.148E-23	3.958E-22	2.345E-21	7.490E-21
Th-230	ΣS(j):		9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.977E-01	9.903E-01
Th-230	Th-230	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.897E-08	1.892E-08	1.877E-08
Th-230	Th-230	2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Th-230	ΣS(j):		2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Ra-226	Th-230	2.100E-04	0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.926E-06	1.841E-05	3.019E-05
Ra-226	Th-230	3.989E-12	0.000E+00	1.726E-15	5.163E-15	1.704E-14	4.971E-14	1.506E-13	3.497E-13	5.736E-13
Ra-226	U-234	2.100E-04	0.000E+00	4.173E-13	3.741E-12	4.097E-11	3.540E-10	3.417E-09	2.087E-08	7.195E-08
Ra-226	U-234	2.771E-10	0.000E+00	5.509E-19	4.938E-18	5.408E-17	4.673E-16	4.510E-15	2.755E-14	9.497E-14
Ra-226	U-234	3.989E-12	0.000E+00	7.929E-21	7.107E-20	7.785E-19	6.727E-18	6.492E-17	3.966E-16	1.367E-15
Ra-226	U-238	3.359E-07	0.000E+00	6.282E-22	1.688E-20	6.150E-19	1.584E-17	4.980E-16	8.514E-15	7.360E-14
Ra-226	U-238	4.434E-13	0.000E+00	8.293E-28	2.228E-26	8.118E-25	2.091E-23	6.574E-22	1.124E-20	9.715E-20
Ra-226	U-238	6.383E-15	0.000E+00	1.194E-29	3.208E-28	1.169E-26	3.010E-25	9.463E-24	1.618E-22	1.398E-21
Ra-226	U-238	2.096E-04	0.000E+00	3.920E-19	1.053E-17	3.838E-16	9.885E-15	3.108E-13	5.313E-12	4.592E-11
Ra-226	U-238	2.767E-10	0.000E+00	5.175E-25	1.391E-23	5.066E-22	1.305E-20	4.102E-19	7.013E-18	6.062E-17
Ra-226	U-238	3.983E-12	0.000E+00	7.448E-27	2.002E-25	7.292E-24	1.878E-22	5.905E-21	1.009E-19	8.726E-19
Ra-226	ΣS(j):		0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.929E-06	1.843E-05	3.026E-05

Summary : Residential (Town)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.770E-10	2.768E-10	2.762E-10	2.738E-10
Th-230	Th-230	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.988E-12	3.984E-12	3.975E-12	3.942E-12
Th-230	ΣS(j):		2.811E-10	2.811E-10	2.811E-10	2.811E-10	2.810E-10	2.808E-10	2.801E-10	2.778E-10
Ra-226	Th-230	2.771E-10	0.000E+00	1.199E-13	3.587E-13	1.184E-12	3.454E-12	1.046E-11	2.430E-11	3.985E-11
Th-230	Th-230	1.998E-04	1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	2.637E-10	2.637E-10	2.637E-10	2.637E-10	2.636E-10	2.636E-10	2.634E-10	2.627E-10	2.605E-10
Th-230	ΣS(j):		1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.794E-12	3.791E-12	3.782E-12	3.750E-12
Th-230	Th-230	4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.194E-08	4.191E-08	4.181E-08	4.146E-08
Th-230	ΣS(j):		4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.191E-08	4.181E-08	4.146E-08
Ra-226	Th-230	4.196E-08	0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.229E-10	1.584E-09	3.678E-09	6.033E-09
Ra-226	Th-230	7.972E-16	0.000E+00	3.449E-19	1.032E-18	3.405E-18	9.935E-18	3.009E-17	6.989E-17	1.146E-16
Ra-226	U-234	4.196E-08	0.000E+00	8.340E-17	7.475E-16	8.188E-15	7.075E-14	6.828E-13	4.172E-12	1.438E-11
Ra-226	U-234	5.538E-14	0.000E+00	1.101E-22	9.868E-22	1.081E-20	9.339E-20	9.014E-19	5.506E-18	1.898E-17
Ra-226	U-234	7.972E-16	0.000E+00	1.585E-24	1.420E-23	1.556E-22	1.344E-21	1.297E-20	7.926E-20	2.732E-19
Ra-226	U-238	6.713E-11	0.000E+00	1.255E-25	3.374E-24	1.229E-22	3.166E-21	9.953E-20	1.701E-18	1.471E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.657E-31	4.453E-30	1.622E-28	4.179E-27	1.314E-25	2.246E-24	1.941E-23
Ra-226	U-238	1.276E-18	0.000E+00	2.385E-33	6.410E-32	2.335E-30	6.015E-29	1.891E-27	3.233E-26	2.794E-25
Ra-226	U-238	4.189E-08	0.000E+00	7.834E-23	2.105E-21	7.669E-20	1.975E-18	6.211E-17	1.062E-15	9.178E-15
Ra-226	U-238	5.530E-14	0.000E+00	1.034E-28	2.779E-27	1.012E-25	2.607E-24	8.198E-23	1.401E-21	1.211E-20
Ra-226	U-238	7.959E-16	0.000E+00	1.488E-30	4.000E-29	1.457E-27	3.753E-26	1.180E-24	2.017E-23	1.744E-22
Ra-226	ΣS(j):		0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.230E-10	1.585E-09	3.683E-09	6.048E-09
Th-230	Th-230	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.536E-14	5.532E-14	5.519E-14	5.473E-14
Th-230	Th-230	7.972E-16	7.972E-16	7.972E-16	7.972E-16	7.971E-16	7.969E-16	7.962E-16	7.943E-16	7.877E-16
Th-230	ΣS(j):		5.618E-14	5.618E-14	5.618E-14	5.618E-14	5.616E-14	5.611E-14	5.598E-14	5.551E-14
Ra-226	Th-230	5.538E-14	0.000E+00	2.396E-17	7.168E-17	2.366E-16	6.902E-16	2.091E-15	4.855E-15	7.964E-15
Th-230	Th-230	2.000E-07	2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.639E-13	2.637E-13	2.631E-13	2.609E-13
Th-230	ΣS(j):		2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.799E-15	3.795E-15	3.786E-15	3.755E-15
U-234	U-234	9.996E-01	9.996E-01	9.963E-01	9.897E-01	9.669E-01	9.048E-01	7.171E-01	3.690E-01	3.607E-02
U-234	U-234	1.319E-06	1.319E-06	1.315E-06	1.306E-06	1.276E-06	1.194E-06	9.465E-07	4.871E-07	4.761E-08
U-234	U-238	1.599E-03	0.000E+00	4.501E-09	1.341E-08	4.368E-08	1.226E-07	3.240E-07	5.003E-07	1.632E-07
U-234	U-238	2.111E-09	0.000E+00	5.941E-15	1.770E-14	5.766E-14	1.619E-13	4.276E-13	6.604E-13	2.154E-13
U-234	U-238	3.039E-11	0.000E+00	8.551E-17	2.548E-16	8.299E-16	2.330E-15	6.155E-15	9.505E-15	3.100E-15
U-234	U-238	3.359E-07	0.000E+00	9.453E-13	2.817E-12	9.175E-12	2.576E-11	6.805E-11	1.051E-10	3.427E-11
U-234	U-238	4.434E-13	0.000E+00	1.248E-18	3.719E-18	1.211E-17	3.400E-17	8.982E-17	1.387E-16	4.524E-17
U-234	U-238	6.383E-15	0.000E+00	1.796E-20	5.353E-20	1.743E-19	4.894E-19	1.293E-18	1.997E-18	6.512E-19
U-234	U-238	3.196E-07	0.000E+00	8.994E-13	2.680E-12	8.729E-12	2.451E-11	6.474E-11	9.997E-11	3.261E-11
U-234	U-238	4.219E-13	0.000E+00	1.187E-18	3.538E-18	1.152E-17	3.235E-17	8.546E-17	1.320E-16	4.304E-17

Summary : Residential (Town)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	0.000E+00	1.709E-20	5.093E-20	1.659E-19	4.656E-19	1.230E-18	1.900E-18	6.195E-19
U-234	U-238	6.713E-11	0.000E+00	1.889E-16	5.630E-16	1.834E-15	5.147E-15	1.360E-14	2.100E-14	6.849E-15
U-234	U-238	8.862E-17	0.000E+00	2.494E-22	7.432E-22	2.420E-21	6.794E-21	1.795E-20	2.772E-20	9.040E-21
U-234	U-238	1.276E-18	0.000E+00	3.589E-24	1.070E-23	3.484E-23	9.780E-23	2.584E-22	3.990E-22	1.301E-22
U-234	U-238	3.200E-10	0.000E+00	9.005E-16	2.684E-15	8.740E-15	2.453E-14	6.482E-14	1.001E-13	3.265E-14
U-234	U-238	4.224E-16	0.000E+00	1.189E-21	3.542E-21	1.154E-20	3.239E-20	8.556E-20	1.321E-19	4.309E-20
U-234	U-238	6.080E-18	0.000E+00	1.711E-23	5.099E-23	1.661E-22	4.662E-22	1.232E-21	1.902E-21	6.203E-22
U-234	U-238	9.980E-01	0.000E+00	2.808E-06	8.369E-06	2.726E-05	7.652E-05	2.022E-04	3.122E-04	1.018E-04
U-234	U-238	1.317E-06	0.000E+00	3.707E-12	1.105E-11	3.598E-11	1.010E-10	2.668E-10	4.121E-10	1.344E-10
U-234	U-238	1.896E-08	0.000E+00	5.336E-14	1.590E-13	5.179E-13	1.454E-12	3.841E-12	5.931E-12	1.934E-12
U-234	U-238	2.096E-04	0.000E+00	5.899E-10	1.758E-09	5.725E-09	1.607E-08	4.246E-08	6.557E-08	2.139E-08
U-234	U-238	2.767E-10	0.000E+00	7.787E-16	2.320E-15	7.557E-15	2.122E-14	5.605E-14	8.655E-14	2.823E-14
U-234	U-238	3.983E-12	0.000E+00	1.121E-17	3.340E-17	1.088E-16	3.054E-16	8.068E-16	1.246E-15	4.063E-16
U-234	U-238	1.994E-04	0.000E+00	5.612E-10	1.673E-09	5.447E-09	1.529E-08	4.040E-08	6.238E-08	2.035E-08
U-234	U-238	2.633E-10	0.000E+00	7.408E-16	2.208E-15	7.190E-15	2.018E-14	5.333E-14	8.235E-14	2.686E-14
U-234	U-238	3.789E-12	0.000E+00	1.066E-17	3.178E-17	1.035E-16	2.905E-16	7.676E-16	1.185E-15	3.866E-16
U-234	U-238	4.189E-08	0.000E+00	1.179E-13	3.513E-13	1.144E-12	3.212E-12	8.486E-12	1.310E-11	4.274E-12
U-234	U-238	5.530E-14	0.000E+00	1.556E-19	4.637E-19	1.510E-18	4.240E-18	1.120E-17	1.730E-17	5.641E-18
U-234	U-238	7.959E-16	0.000E+00	2.240E-21	6.675E-21	2.174E-20	6.102E-20	1.612E-19	2.490E-19	8.120E-20
U-234	U-238	1.997E-07	0.000E+00	5.619E-13	1.675E-12	5.454E-12	1.531E-11	4.045E-11	6.246E-11	2.037E-11
U-234	U-238	2.636E-13	0.000E+00	7.417E-19	2.210E-18	7.199E-18	2.021E-17	5.339E-17	8.245E-17	2.689E-17
U-234	U-238	3.794E-15	0.000E+00	1.068E-20	3.182E-20	1.036E-19	2.909E-19	7.685E-19	1.187E-18	3.871E-19
U-234	ΣS(j):		9.996E-01	9.963E-01	9.897E-01	9.670E-01	9.049E-01	7.173E-01	3.693E-01	3.617E-02
U-234	U-234	1.899E-08	1.899E-08	1.893E-08	1.880E-08	1.837E-08	1.719E-08	1.362E-08	7.011E-09	6.853E-10
U-234	U-234	2.100E-04	2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.900E-04	1.506E-04	7.750E-05	7.576E-06
U-234	ΣS(j):		2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.901E-04	1.506E-04	7.751E-05	7.576E-06
U-234	U-234	2.771E-10	2.771E-10	2.762E-10	2.744E-10	2.681E-10	2.509E-10	1.988E-10	1.023E-10	1.000E-11
U-234	U-234	3.989E-12	3.989E-12	3.976E-12	3.950E-12	3.859E-12	3.611E-12	2.862E-12	1.473E-12	1.439E-13
U-234	ΣS(j):		2.811E-10	2.802E-10	2.783E-10	2.719E-10	2.545E-10	2.017E-10	1.038E-10	1.014E-11
U-234	U-234	1.998E-04	1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	2.637E-10	2.637E-10	2.628E-10	2.611E-10	2.551E-10	2.387E-10	1.892E-10	9.733E-11	9.514E-12
U-234	ΣS(j):		1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	3.795E-12	3.795E-12	3.783E-12	3.758E-12	3.671E-12	3.435E-12	2.723E-12	1.401E-12	1.369E-13
U-234	U-234	4.196E-08	4.196E-08	4.182E-08	4.154E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	ΣS(j):		4.196E-08	4.182E-08	4.155E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	U-234	5.538E-14	5.538E-14	5.520E-14	5.484E-14	5.357E-14	5.013E-14	3.973E-14	2.044E-14	1.998E-15
U-234	U-234	7.972E-16	7.972E-16	7.946E-16	7.893E-16	7.712E-16	7.216E-16	5.719E-16	2.943E-16	2.876E-17
U-234	ΣS(j):		5.618E-14	5.600E-14	5.562E-14	5.435E-14	5.085E-14	4.030E-14	2.074E-14	2.027E-15
U-234	U-234	2.000E-07	2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	2.640E-13	2.640E-13	2.631E-13	2.614E-13	2.554E-13	2.390E-13	1.894E-13	9.745E-14	9.526E-15
U-234	ΣS(j):		2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	3.800E-15	3.800E-15	3.787E-15	3.762E-15	3.676E-15	3.440E-15	2.726E-15	1.403E-15	1.371E-16

Summary : Residential (Town)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	5.450E-07	5.432E-07	5.396E-07	5.272E-07	4.933E-07	3.911E-07	2.014E-07	1.972E-08
U-238	U-238	1.599E-03	1.599E-03	1.594E-03	1.583E-03	1.547E-03	1.448E-03	1.148E-03	5.909E-04	5.787E-05
U-238	ΣS(j):		1.600E-03	1.595E-03	1.584E-03	1.548E-03	1.448E-03	1.148E-03	5.911E-04	5.789E-05
U-238	U-238	2.111E-09	2.111E-09	2.104E-09	2.090E-09	2.042E-09	1.911E-09	1.515E-09	7.800E-10	7.639E-11
U-238	U-238	3.039E-11	3.039E-11	3.029E-11	3.009E-11	2.940E-11	2.751E-11	2.180E-11	1.123E-11	1.100E-12
U-238	ΣS(j):		2.142E-09	2.134E-09	2.120E-09	2.072E-09	1.939E-09	1.537E-09	7.912E-10	7.749E-11
U-238	U-238	3.359E-07	3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	4.434E-13	4.434E-13	4.420E-13	4.390E-13	4.290E-13	4.014E-13	3.182E-13	1.638E-13	1.605E-14
U-238	ΣS(j):		3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	6.383E-15	6.383E-15	6.362E-15	6.319E-15	6.174E-15	5.778E-15	4.580E-15	2.358E-15	2.310E-16
U-238	U-238	3.196E-07	3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	ΣS(j):		3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	U-238	4.219E-13	4.219E-13	4.205E-13	4.177E-13	4.081E-13	3.819E-13	3.027E-13	1.559E-13	1.527E-14
U-238	U-238	6.073E-15	6.073E-15	6.053E-15	6.012E-15	5.874E-15	5.497E-15	4.357E-15	2.244E-15	2.197E-16
U-238	ΣS(j):		4.280E-13	4.265E-13	4.237E-13	4.140E-13	3.874E-13	3.071E-13	1.581E-13	1.549E-14
U-238	U-238	6.713E-11	6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	8.862E-17	8.862E-17	8.832E-17	8.774E-17	8.572E-17	8.022E-17	6.359E-17	3.274E-17	3.206E-18
U-238	ΣS(j):		6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	1.276E-18	1.276E-18	1.271E-18	1.263E-18	1.234E-18	1.155E-18	9.153E-19	4.712E-19	4.615E-20
U-238	U-238	3.200E-10	3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	ΣS(j):		3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	U-238	4.224E-16	4.224E-16	4.210E-16	4.182E-16	4.086E-16	3.824E-16	3.031E-16	1.561E-16	1.528E-17
U-238	U-238	6.080E-18	6.080E-18	6.060E-18	6.020E-18	5.882E-18	5.504E-18	4.363E-18	2.246E-18	2.200E-19
U-238	ΣS(j):		4.285E-16	4.271E-16	4.242E-16	4.145E-16	3.879E-16	3.075E-16	1.583E-16	1.550E-17
U-238	U-238	9.980E-01	9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.317E-06	1.317E-06	1.313E-06	1.304E-06	1.274E-06	1.192E-06	9.453E-07	4.867E-07	4.767E-08
U-238	ΣS(j):		9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.896E-08	1.896E-08	1.890E-08	1.877E-08	1.834E-08	1.716E-08	1.361E-08	7.005E-09	6.861E-10
U-238	U-238	2.096E-04	2.096E-04	2.089E-04	2.075E-04	2.028E-04	1.898E-04	1.504E-04	7.744E-05	7.585E-06
U-238	ΣS(j):		2.096E-04	2.089E-04	2.076E-04	2.028E-04	1.898E-04	1.504E-04	7.745E-05	7.586E-06
U-238	U-238	2.767E-10	2.767E-10	2.758E-10	2.740E-10	2.677E-10	2.505E-10	1.985E-10	1.022E-10	1.001E-11
U-238	U-238	3.983E-12	3.983E-12	3.970E-12	3.943E-12	3.853E-12	3.605E-12	2.858E-12	1.471E-12	1.441E-13
U-238	ΣS(j):		2.807E-10	2.798E-10	2.779E-10	2.715E-10	2.541E-10	2.014E-10	1.037E-10	1.016E-11
U-238	U-238	1.994E-04	1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	2.633E-10	2.633E-10	2.624E-10	2.607E-10	2.547E-10	2.383E-10	1.889E-10	9.726E-11	9.526E-12
U-238	ΣS(j):		1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	3.789E-12	3.789E-12	3.777E-12	3.752E-12	3.666E-12	3.430E-12	2.719E-12	1.400E-12	1.371E-13

Summary : Residential (Town)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	4.189E-08	4.175E-08	4.148E-08	4.052E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	ΣS(j):		4.189E-08	4.176E-08	4.148E-08	4.053E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	U-238	5.530E-14	5.530E-14	5.511E-14	5.475E-14	5.349E-14	5.006E-14	3.968E-14	2.043E-14	2.001E-15
U-238	U-238	7.959E-16	7.959E-16	7.933E-16	7.880E-16	7.699E-16	7.205E-16	5.711E-16	2.941E-16	2.880E-17
U-238	ΣS(j):		5.609E-14	5.591E-14	5.554E-14	5.426E-14	5.078E-14	4.025E-14	2.072E-14	2.030E-15
U-238	U-238	1.997E-07	1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	2.636E-13	2.636E-13	2.627E-13	2.610E-13	2.550E-13	2.386E-13	1.891E-13	9.738E-14	9.537E-15
U-238	ΣS(j):		1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	3.794E-15	3.794E-15	3.781E-15	3.756E-15	3.670E-15	3.434E-15	2.722E-15	1.402E-15	1.373E-16

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 191.41 seconds

Total water/soil iteration failures = 1.910E+02.

RESidual RADioactivity (ResRad) Dose-Modeling Output
Residential (Rural)

Summary : Residential (Rural)

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Time = 0.000E+00	13
Time = 1.000E+00	14
Time = 3.000E+00	15
Time = 1.000E+01	16
Time = 3.000E+01	17
Time = 1.000E+02	18
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Summary : Residential (Rural)

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1 (1)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1 (2)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1 (3)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1 (4)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1 (5)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1 (6)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1 (7)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1 (8)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1 (9)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1 (10)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1 (11)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1 (12)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1 (13)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1 (14)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1 (15)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1 (16)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1 (17)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1 (18)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1 (19)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1 (20)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.129E-02	2.077E-02	DCF2 (1)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2 (2)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2 (3)
B-1	Po-210	1.580E-02	1.582E-02	DCF2 (4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2 (5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2 (8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2 (11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2 (14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2 (17)
B-1	Th-230	3.760E-01	3.759E-01	DCF2 (20)
B-1	U-234	3.480E-02	3.479E-02	DCF2 (35)
B-1	U-238	2.970E-02	2.973E-02	DCF2 (50)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2 (51)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2 (66)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	2.585E-03	2.575E-03	DCF3 (1)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3 (2)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3 (3)
D-1	Po-210	4.480E-03	4.477E-03	DCF3 (4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3 (8)
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3 (11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3 (14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3 (17)
D-1	Th-230	7.920E-04	7.918E-04	DCF3 (20)
D-1	U-234	1.830E-04	1.831E-04	DCF3 (35)

Summary : Residential (Rural)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	U-238	1.650E-04	1.650E-04	DCF3(50)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(51)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(66)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(35,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(35,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(35,3)
D-34				

Summary : Residential (Rural)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(50,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(50,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(50,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(66,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(66,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(66,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(35,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(35,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(50,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(50,2)
D-5				

Summary : Residential (Rural)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter		Current	Base	Parameter
			Value#	Case*	Name
D-5	U-238+D	, fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238+D	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5					
D-5	U-238+D1	, fish	1.000E+01	1.000E+01	BIOFAC(66,1)
D-5	U-238+D1	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(66,2)
D-5					

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Residential (Rural)

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.200E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(35)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(50)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(35)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(50)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.690E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ

Summary : Residential (Rural)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(4)
R016	Unsat. zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.632E-02	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(5)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(20)
R016	Unsat. zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)

Summary : Residential (Rural)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (35)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (35,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (35)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (35)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (35)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (50)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (50,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (50)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (50)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (50)
R017	Inhalation rate (m**3/yr)	6.192E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	2.600E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.560E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)

Summary : Residential (Rural)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	3.900E+00	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	3.900E+00	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.200E+02	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	2.500E-01	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	0.000E+00	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	0.000E+00	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	0.000E+00	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	0.000E+00	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	0.000E+00	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Summary : Residential (Rural)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVS
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary : Residential (Rural)

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Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residential (Rural)

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Pb-210	1.000E+00
Thickness:	2.00 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	1.000E+00
		Th-230	1.000E+00
		U-234	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	4.300E+00	4.289E+00	4.270E+00	4.203E+00	4.017E+00	3.429E+00	2.258E+00	9.219E-01
M(t):	3.583E-01	3.575E-01	3.558E-01	3.503E-01	3.347E-01	2.858E-01	1.881E-01	7.682E-02

Maximum TDOSE(t): 4.300E+00 mrem/yr at t = 0.000E+00 years

Summary : Residential (Rural)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.399E-03	0.0006	4.543E-04	0.0001	0.000E+00	0.0000	5.664E-02	0.0132	0.000E+00	0.0000	0.000E+00	0.0000	4.293E-01	0.0998
Po-210	8.100E-06	0.0000	1.115E-04	0.0000	0.000E+00	0.0000	3.987E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	1.781E-01	0.0414
Ra-226	3.287E+00	0.7644	5.523E-04	0.0001	0.000E+00	0.0000	8.204E-02	0.0191	0.000E+00	0.0000	0.000E+00	0.0000	9.649E-02	0.0224
Th-230	1.068E-03	0.0002	5.819E-03	0.0014	0.000E+00	0.0000	1.562E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	6.902E-02	0.0161
U-234	1.145E-04	0.0000	5.377E-04	0.0001	0.000E+00	0.0000	8.907E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.592E-02	0.0037
U-238	5.118E-02	0.0119	4.593E-04	0.0001	0.000E+00	0.0000	8.639E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.544E-02	0.0036
Total	3.342E+00	0.7772	7.934E-03	0.0018	0.000E+00	0.0000	1.460E-01	0.0340	0.000E+00	0.0000	0.000E+00	0.0000	8.042E-01	0.1870

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.888E-01	0.1137
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.822E-01	0.0424
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.466E+00	0.8061
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.747E-02	0.0180
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.746E-02	0.0041
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.794E-02	0.0158
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.300E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Rural)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.328E-03	0.0005	5.308E-04	0.0001	0.000E+00	0.0000	5.846E-02	0.0136	0.000E+00	0.0000	0.000E+00	0.0000	5.609E-01	0.1308
Po-210	1.279E-06	0.0000	1.762E-05	0.0000	0.000E+00	0.0000	6.298E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.812E-02	0.0066
Ra-226	3.278E+00	0.7642	5.666E-04	0.0001	0.000E+00	0.0000	8.365E-02	0.0195	0.000E+00	0.0000	0.000E+00	0.0000	1.123E-01	0.0262
Th-230	2.490E-03	0.0006	5.819E-03	0.0014	0.000E+00	0.0000	1.597E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	6.906E-02	0.0161
U-234	1.142E-04	0.0000	5.360E-04	0.0001	0.000E+00	0.0000	8.878E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.586E-02	0.0037
U-238	5.101E-02	0.0119	4.578E-04	0.0001	0.000E+00	0.0000	8.611E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.539E-02	0.0036
Total	3.334E+00	0.7772	7.928E-03	0.0018	0.000E+00	0.0000	1.461E-01	0.0341	0.000E+00	0.0000	0.000E+00	0.0000	8.017E-01	0.1869

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.222E-01	0.1451
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.877E-02	0.0067
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.474E+00	0.8100
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.897E-02	0.0184
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.740E-02	0.0041
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.772E-02	0.0158
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.289E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Rural)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.181E-03	0.0005	5.132E-04	0.0001	0.000E+00	0.0000	5.532E-02	0.0130	0.000E+00	0.0000	0.000E+00	0.0000	5.511E-01	0.1291
Po-210	3.188E-08	0.0000	4.391E-07	0.0000	0.000E+00	0.0000	1.570E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.009E-04	0.0002
Ra-226	3.260E+00	0.7634	5.962E-04	0.0001	0.000E+00	0.0000	8.673E-02	0.0203	0.000E+00	0.0000	0.000E+00	0.0000	1.468E-01	0.0344
Th-230	5.322E-03	0.0012	5.819E-03	0.0014	0.000E+00	0.0000	1.671E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	6.917E-02	0.0162
U-234	1.135E-04	0.0000	5.325E-04	0.0001	0.000E+00	0.0000	8.819E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.576E-02	0.0037
U-238	5.067E-02	0.0119	4.548E-04	0.0001	0.000E+00	0.0000	8.554E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.529E-02	0.0036
Total	3.318E+00	0.7770	7.916E-03	0.0019	0.000E+00	0.0000	1.455E-01	0.0341	0.000E+00	0.0000	0.000E+00	0.0000	7.988E-01	0.1871

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.091E-01	0.1426
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.171E-04	0.0002
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.494E+00	0.8182
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.199E-02	0.0192
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.729E-02	0.0040
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.727E-02	0.0158
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.270E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Rural)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.732E-03	0.0004	4.080E-04	0.0001	0.000E+00	0.0000	4.396E-02	0.0105	0.000E+00	0.0000	0.000E+00	0.0000	4.383E-01	0.1043
Po-210	7.796E-14	0.0000	1.074E-12	0.0000	0.000E+00	0.0000	3.838E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.714E-09	0.0000
Ra-226	3.197E+00	0.7605	6.838E-04	0.0002	0.000E+00	0.0000	9.574E-02	0.0228	0.000E+00	0.0000	0.000E+00	0.0000	2.505E-01	0.0596
Th-230	1.511E-02	0.0036	5.821E-03	0.0014	0.000E+00	0.0000	1.948E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	6.978E-02	0.0166
U-234	1.115E-04	0.0000	5.206E-04	0.0001	0.000E+00	0.0000	8.618E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.540E-02	0.0037
U-238	4.951E-02	0.0118	4.443E-04	0.0001	0.000E+00	0.0000	8.358E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.493E-02	0.0036
Total	3.263E+00	0.7763	7.878E-03	0.0019	0.000E+00	0.0000	1.433E-01	0.0341	0.000E+00	0.0000	0.000E+00	0.0000	7.890E-01	0.1877

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.844E-01	0.1152
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.753E-09	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.544E+00	0.8430
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.266E-02	0.0220
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.690E-02	0.0040
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.572E-02	0.0156
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.203E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Rural)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	8.974E-04	0.0002	2.114E-04	0.0001	0.000E+00	0.0000	2.277E-02	0.0057	0.000E+00	0.0000	0.000E+00	0.0000	2.271E-01	0.0565
Po-210	7.219E-30	0.0000	9.942E-29	0.0000	0.000E+00	0.0000	3.554E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.587E-25	0.0000
Ra-226	3.023E+00	0.7526	8.275E-04	0.0002	0.000E+00	0.0000	1.100E-01	0.0274	0.000E+00	0.0000	0.000E+00	0.0000	4.313E-01	0.1074
Th-230	4.204E-02	0.0105	5.826E-03	0.0015	0.000E+00	0.0000	2.849E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	7.282E-02	0.0181
U-234	1.095E-04	0.0000	4.882E-04	0.0001	0.000E+00	0.0000	8.068E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.443E-02	0.0036
U-238	4.633E-02	0.0115	4.158E-04	0.0001	0.000E+00	0.0000	7.821E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.398E-02	0.0035
Total	3.112E+00	0.7748	7.769E-03	0.0019	0.000E+00	0.0000	1.372E-01	0.0342	0.000E+00	0.0000	0.000E+00	0.0000	7.596E-01	0.1891

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.509E-01	0.0625
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.624E-25	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.565E+00	0.8875
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.235E-01	0.0308
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.583E-02	0.0039
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.150E-02	0.0153
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.017E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Rural)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	8.979E-05	0.0000	2.115E-05	0.0000	0.000E+00	0.0000	2.279E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-02	0.0066
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.484E+00	0.7245	8.382E-04	0.0002	0.000E+00	0.0000	1.074E-01	0.0313	0.000E+00	0.0000	0.000E+00	0.0000	5.244E-01	0.1529
Th-230	1.252E-01	0.0365	5.847E-03	0.0017	0.000E+00	0.0000	6.245E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	8.832E-02	0.0258
U-234	1.365E-04	0.0000	3.903E-04	0.0001	0.000E+00	0.0000	6.421E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.148E-02	0.0033
U-238	3.672E-02	0.0107	3.297E-04	0.0001	0.000E+00	0.0000	6.201E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-02	0.0032
Total	2.646E+00	0.7718	7.427E-03	0.0022	0.000E+00	0.0000	1.172E-01	0.0342	0.000E+00	0.0000	0.000E+00	0.0000	6.580E-01	0.1919

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-02	0.0073
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.117E+00	0.9090
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.256E-01	0.0658
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.265E-02	0.0037
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.876E-02	0.0142
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.429E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Rural)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.250E-07	0.0000	2.943E-08	0.0000	0.000E+00	0.0000	3.171E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.162E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.417E+00	0.6277	4.906E-04	0.0002	0.000E+00	0.0000	6.263E-02	0.0277	0.000E+00	0.0000	0.000E+00	0.0000	3.126E-01	0.1384
Th-230	2.894E-01	0.1282	5.890E-03	0.0026	0.000E+00	0.0000	1.347E-02	0.0060	0.000E+00	0.0000	0.000E+00	0.0000	1.241E-01	0.0550
U-234	3.711E-04	0.0002	2.087E-04	0.0001	0.000E+00	0.0000	3.446E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	6.054E-03	0.0027
U-238	1.891E-02	0.0084	1.699E-04	0.0001	0.000E+00	0.0000	3.195E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	5.709E-03	0.0025
Total	1.726E+00	0.7644	6.759E-03	0.0030	0.000E+00	0.0000	7.677E-02	0.0340	0.000E+00	0.0000	0.000E+00	0.0000	4.484E-01	0.1986

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.494E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.600E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.793E+00	0.7941
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.328E-01	0.1917
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.752E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.979E-03	0.0031
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.036E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-02	0.0111
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.752E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.258E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Rural)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.257E-17	0.0000	2.960E-18	0.0000	0.000E+00	0.0000	3.189E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.180E-15	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.986E-01	0.2155	6.878E-05	0.0001	0.000E+00	0.0000	8.780E-03	0.0095	0.000E+00	0.0000	0.000E+00	0.0000	4.382E-02	0.0475
Th-230	4.740E-01	0.5142	5.906E-03	0.0064	0.000E+00	0.0000	2.162E-02	0.0235	0.000E+00	0.0000	0.000E+00	0.0000	1.643E-01	0.1782
U-234	1.134E-03	0.0012	3.516E-05	0.0000	0.000E+00	0.0000	8.389E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	9.836E-04	0.0011
U-238	1.853E-03	0.0020	1.669E-05	0.0000	0.000E+00	0.0000	3.139E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.605E-04	0.0006
Total	6.756E-01	0.7329	6.026E-03	0.0065	0.000E+00	0.0000	3.052E-02	0.0331	0.000E+00	0.0000	0.000E+00	0.0000	2.097E-01	0.2274

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.778E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.514E-15	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.487E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.513E-01	0.2726
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.817E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.658E-01	0.7223
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.316E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.237E-03	0.0024
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.015E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.461E-03	0.0027
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.713E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.219E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residential (Rural)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210+D	Pb-210+D	1.000E+00	2.738E-01	2.650E-01	2.481E-01	1.971E-01	1.021E-01	1.022E-02	1.422E-05	1.430E-15
Pb-210+D	Po-210	1.000E+00	2.150E-01	3.573E-01	3.610E-01	2.873E-01	1.488E-01	1.489E-02	2.073E-05	2.085E-15
Pb-210+D	ΣDSR(j)		4.888E-01	6.222E-01	6.091E-01	4.844E-01	2.509E-01	2.511E-02	3.494E-05	3.514E-15
Pb-210+D1	Pb-210+D1	1.320E-06	3.667E-07	3.548E-07	3.322E-07	2.639E-07	1.367E-07	1.368E-08	1.904E-11	1.915E-21
Pb-210+D2	Pb-210+D2	1.900E-08	8.880E-09	8.593E-09	8.046E-09	6.392E-09	3.311E-09	3.313E-10	4.611E-13	4.637E-23
Po-210	Po-210	1.000E+00	1.822E-01	2.877E-02	7.171E-04	1.753E-09	1.624E-25	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	9.996E-01	3.457E+00	3.447E+00	3.428E+00	3.361E+00	3.177E+00	2.611E+00	1.489E+00	2.087E-01
Ra-226+D	Pb-210+D	9.996E-01	4.375E-03	1.277E-02	2.866E-02	7.603E-02	1.593E-01	2.073E-01	1.243E-01	1.742E-02
Ra-226+D	Po-210	9.996E-01	2.559E-03	1.218E-02	3.491E-02	1.041E-01	2.258E-01	2.970E-01	1.782E-01	2.498E-02
Ra-226+D	ΣDSR(j)		3.464E+00	3.472E+00	3.491E+00	3.541E+00	3.563E+00	3.115E+00	1.792E+00	2.511E-01
Ra-226+D	Ra-226+D	1.319E-06	4.563E-06	4.550E-06	4.524E-06	4.436E-06	4.194E-06	3.446E-06	1.966E-06	2.755E-07
Ra-226+D	Pb-210+D1	1.319E-06	5.857E-09	1.710E-08	3.838E-08	1.018E-07	2.133E-07	2.776E-07	1.664E-07	2.333E-08
Ra-226+D	ΣDSR(j)		4.569E-06	4.567E-06	4.563E-06	4.538E-06	4.408E-06	3.724E-06	2.132E-06	2.989E-07
Ra-226+D	Ra-226+D	1.899E-08	6.568E-08	6.549E-08	6.512E-08	6.386E-08	6.037E-08	4.960E-08	2.829E-08	3.966E-09
Ra-226+D	Pb-210+D2	1.899E-08	1.408E-10	4.129E-10	9.283E-10	2.464E-09	5.164E-09	6.722E-09	4.030E-09	5.650E-10
Ra-226+D	ΣDSR(j)		6.582E-08	6.590E-08	6.605E-08	6.632E-08	6.554E-08	5.632E-08	3.232E-08	4.531E-09
Ra-226+D1	Ra-226+D1	2.100E-04	1.833E-03	1.827E-03	1.817E-03	1.782E-03	1.685E-03	1.384E-03	7.895E-04	1.107E-04
Ra-226+D1	Pb-210+D	2.100E-04	9.190E-07	2.683E-06	6.020E-06	1.597E-05	3.346E-05	4.354E-05	2.610E-05	3.660E-06
Ra-226+D1	Po-210	2.100E-04	5.376E-07	2.558E-06	7.332E-06	2.186E-05	4.743E-05	6.238E-05	3.743E-05	5.247E-06
Ra-226+D1	ΣDSR(j)		1.834E-03	1.833E-03	1.831E-03	1.820E-03	1.766E-03	1.490E-03	8.531E-04	1.196E-04
Ra-226+D1	Ra-226+D1	2.771E-10	2.419E-09	2.412E-09	2.399E-09	2.352E-09	2.224E-09	1.827E-09	1.042E-09	1.461E-10
Ra-226+D1	Pb-210+D1	2.771E-10	1.230E-12	3.592E-12	8.061E-12	2.138E-11	4.480E-11	5.831E-11	3.496E-11	4.901E-12
Ra-226+D1	ΣDSR(j)		2.420E-09	2.416E-09	2.407E-09	2.374E-09	2.269E-09	1.885E-09	1.077E-09	1.510E-10
Ra-226+D1	Ra-226+D1	3.989E-12	3.482E-11	3.472E-11	3.453E-11	3.386E-11	3.201E-11	2.630E-11	1.500E-11	2.103E-12
Ra-226+D1	Pb-210+D2	3.989E-12	2.957E-14	8.673E-14	1.950E-13	5.176E-13	1.085E-12	1.412E-12	8.465E-13	1.187E-13
Ra-226+D1	ΣDSR(j)		3.485E-11	3.481E-11	3.472E-11	3.437E-11	3.309E-11	2.771E-11	1.585E-11	2.221E-12
Ra-226+D2	Ra-226+D2	1.998E-04	6.110E-04	6.092E-04	6.058E-04	5.940E-04	5.616E-04	4.614E-04	2.632E-04	3.689E-05
Ra-226+D2	Pb-210+D	1.998E-04	8.743E-07	2.552E-06	5.728E-06	1.519E-05	3.183E-05	4.143E-05	2.484E-05	3.482E-06
Ra-226+D2	Po-210	1.998E-04	5.115E-07	2.434E-06	6.976E-06	2.080E-05	4.513E-05	5.935E-05	3.561E-05	4.992E-06
Ra-226+D2	ΣDSR(j)		6.123E-04	6.142E-04	6.185E-04	6.300E-04	6.386E-04	5.622E-04	3.237E-04	4.537E-05
Ra-226+D2	Ra-226+D2	2.637E-10	8.065E-10	8.042E-10	7.997E-10	7.841E-10	7.413E-10	6.091E-10	3.474E-10	4.870E-11
Ra-226+D2	Pb-210+D1	2.637E-10	1.170E-12	3.417E-12	7.670E-12	2.035E-11	4.262E-11	5.547E-11	3.326E-11	4.663E-12
Ra-226+D2	ΣDSR(j)		8.076E-10	8.076E-10	8.074E-10	8.045E-10	7.839E-10	6.646E-10	3.807E-10	5.336E-11

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D2	Ra-226+D2	3.795E-12	1.161E-11	1.158E-11	1.151E-11	1.129E-11	1.067E-11	8.767E-12	5.001E-12	7.010E-13
Ra-226+D2	Pb-210+D2	3.795E-12	2.813E-14	8.252E-14	1.855E-13	4.925E-13	1.032E-12	1.343E-12	8.053E-13	1.129E-13
Ra-226+D2	ΣDSR(j)		1.164E-11	1.166E-11	1.170E-11	1.178E-11	1.170E-11	1.011E-11	5.806E-12	8.139E-13
Ra-226+D3	Ra-226+D3	4.196E-08	3.495E-07	3.485E-07	3.465E-07	3.398E-07	3.212E-07	2.639E-07	1.506E-07	2.110E-08
Ra-226+D3	Pb-210+D	4.196E-08	1.836E-10	5.361E-10	1.203E-09	3.191E-09	6.686E-09	8.702E-09	5.217E-09	7.314E-10
Ra-226+D3	Po-210	4.196E-08	1.074E-10	5.113E-10	1.465E-09	4.369E-09	9.479E-09	1.247E-08	7.480E-09	1.049E-09
Ra-226+D3	ΣDSR(j)		3.498E-07	3.495E-07	3.492E-07	3.474E-07	3.374E-07	2.851E-07	1.633E-07	2.288E-08
Ra-226+D3	Ra-226+D3	5.538E-14	4.613E-13	4.600E-13	4.574E-13	4.485E-13	4.240E-13	3.484E-13	1.987E-13	2.786E-14
Ra-226+D3	Pb-210+D1	5.538E-14	2.458E-16	7.178E-16	1.611E-15	4.273E-15	8.952E-15	1.165E-14	6.985E-15	9.793E-16
Ra-226+D3	ΣDSR(j)		4.615E-13	4.607E-13	4.590E-13	4.528E-13	4.330E-13	3.601E-13	2.057E-13	2.884E-14
Ra-226+D3	Ra-226+D3	7.972E-16	6.640E-15	6.621E-15	6.584E-15	6.456E-15	6.104E-15	5.015E-15	2.861E-15	4.010E-16
Ra-226+D3	Pb-210+D2	7.972E-16	5.909E-18	1.733E-17	3.896E-17	1.034E-16	2.168E-16	2.822E-16	1.692E-16	2.372E-17
Ra-226+D3	ΣDSR(j)		6.646E-15	6.639E-15	6.623E-15	6.560E-15	6.320E-15	5.297E-15	3.030E-15	4.247E-16
Ra-226+D4	Ra-226+D4	2.000E-07	3.686E-08	3.676E-08	3.655E-08	3.584E-08	3.389E-08	2.784E-08	1.588E-08	2.226E-09
Ra-226+D4	Pb-210+D	2.000E-07	8.754E-10	2.556E-09	5.735E-09	1.521E-08	3.187E-08	4.148E-08	2.487E-08	3.486E-09
Ra-226+D4	Po-210	2.000E-07	5.121E-10	2.437E-09	6.984E-09	2.083E-08	4.518E-08	5.942E-08	3.565E-08	4.998E-09
Ra-226+D4	ΣDSR(j)		3.825E-08	4.175E-08	4.927E-08	7.188E-08	1.109E-07	1.287E-07	7.640E-08	1.071E-08
Ra-226+D4	Ra-226+D4	2.640E-13	4.866E-14	4.852E-14	4.825E-14	4.731E-14	4.473E-14	3.675E-14	2.096E-14	2.939E-15
Ra-226+D4	Pb-210+D1	2.640E-13	1.172E-15	3.422E-15	7.679E-15	2.037E-14	4.267E-14	5.554E-14	3.330E-14	4.668E-15
Ra-226+D4	ΣDSR(j)		4.983E-14	5.194E-14	5.593E-14	6.768E-14	8.740E-14	9.229E-14	5.426E-14	7.607E-15
Ra-226+D4	Ra-226+D4	3.800E-15	7.004E-16	6.984E-16	6.945E-16	6.810E-16	6.438E-16	5.290E-16	3.017E-16	4.230E-17
Ra-226+D4	Pb-210+D2	3.800E-15	2.817E-17	8.262E-17	1.857E-16	4.931E-16	1.033E-15	1.345E-15	8.063E-16	1.130E-16
Ra-226+D4	ΣDSR(j)		7.286E-16	7.811E-16	8.803E-16	1.174E-15	1.677E-15	1.874E-15	1.108E-15	1.553E-16
Th-230	Th-230	9.996E-01	7.669E-02	7.669E-02	7.668E-02	7.668E-02	7.666E-02	7.659E-02	7.641E-02	7.577E-02
Th-230	Ra-226+D	9.996E-01	7.485E-04	2.244E-03	5.222E-03	1.551E-02	4.382E-02	1.312E-01	3.038E-01	4.978E-01
Th-230	Pb-210+D	9.996E-01	6.408E-07	4.369E-06	2.240E-05	1.842E-04	1.249E-03	7.292E-03	2.156E-02	3.779E-02
Th-230	Po-210	9.996E-01	3.013E-07	3.345E-06	2.376E-05	2.389E-04	1.735E-03	1.037E-02	3.083E-02	5.409E-02
Th-230	ΣDSR(j)		7.744E-02	7.894E-02	8.195E-02	9.261E-02	1.235E-01	2.255E-01	4.326E-01	6.654E-01
Th-230	Th-230	1.319E-06	1.012E-07	1.012E-07	1.012E-07	1.012E-07	1.012E-07	1.011E-07	1.009E-07	1.000E-07
Th-230	Ra-226+D	1.319E-06	9.880E-10	2.962E-09	6.893E-09	2.048E-08	5.785E-08	1.732E-07	4.010E-07	6.571E-07
Th-230	Pb-210+D1	1.319E-06	8.238E-13	5.741E-12	2.974E-11	2.459E-10	1.671E-09	9.757E-09	2.886E-08	5.058E-08
Th-230	ΣDSR(j)		1.022E-07	1.042E-07	1.081E-07	1.219E-07	1.607E-07	2.841E-07	5.307E-07	8.076E-07
Th-230	Th-230	1.899E-08	1.457E-09	1.457E-09	1.457E-09	1.457E-09	1.457E-09	1.455E-09	1.452E-09	1.440E-09
Th-230	Ra-226+D	1.899E-08	1.422E-11	4.263E-11	9.921E-11	2.948E-10	8.327E-10	2.493E-09	5.772E-09	9.458E-09
Th-230	Pb-210+D2	1.899E-08	2.004E-14	1.393E-13	7.209E-13	5.956E-12	4.047E-11	2.363E-10	6.990E-10	1.225E-09
Th-230	ΣDSR(j)		1.471E-09	1.500E-09	1.557E-09	1.758E-09	2.330E-09	4.185E-09	7.923E-09	1.212E-08

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.100E-04	1.611E-05	1.611E-05	1.611E-05	1.611E-05	1.610E-05	1.609E-05	1.605E-05	1.592E-05
Th-230	Ra-226+D1	2.100E-04	3.970E-07	1.190E-06	2.769E-06	8.225E-06	2.324E-05	6.958E-05	1.611E-04	2.639E-04
Th-230	Pb-210+D	2.100E-04	1.346E-10	9.177E-10	4.705E-09	3.869E-08	2.624E-07	1.532E-06	4.529E-06	7.937E-06
Th-230	Po-210	2.100E-04	6.328E-11	7.025E-10	4.990E-09	5.018E-08	3.644E-07	2.178E-06	6.475E-06	1.136E-05
Th-230	ΣDSR(j)		1.650E-05	1.730E-05	1.889E-05	2.442E-05	3.996E-05	8.937E-05	1.881E-04	2.991E-04
Th-230	Th-230	2.771E-10	2.126E-11	2.126E-11	2.126E-11	2.126E-11	2.125E-11	2.124E-11	2.119E-11	2.101E-11
Th-230	Ra-226+D1	2.771E-10	5.241E-13	1.571E-12	3.655E-12	1.086E-11	3.067E-11	9.184E-11	2.126E-10	3.484E-10
Th-230	Pb-210+D1	2.771E-10	1.730E-16	1.206E-15	6.247E-15	5.164E-14	3.509E-13	2.050E-12	6.062E-12	1.062E-11
Th-230	ΣDSR(j)		2.179E-11	2.283E-11	2.492E-11	3.217E-11	5.228E-11	1.151E-10	2.398E-10	3.800E-10
Th-230	Th-230	3.989E-12	3.060E-13	3.060E-13	3.060E-13	3.060E-13	3.059E-13	3.057E-13	3.049E-13	3.024E-13
Th-230	Ra-226+D1	3.989E-12	7.543E-15	2.261E-14	5.261E-14	1.563E-13	4.415E-13	1.322E-12	3.060E-12	5.014E-12
Th-230	Pb-210+D2	3.989E-12	4.209E-18	2.926E-17	1.514E-16	1.251E-15	8.500E-15	4.964E-14	1.468E-13	2.573E-13
Th-230	ΣDSR(j)		3.136E-13	3.287E-13	3.588E-13	4.635E-13	7.559E-13	1.677E-12	3.512E-12	5.574E-12
Th-230	Th-230	1.998E-04	1.532E-05	1.532E-05	1.532E-05	1.532E-05	1.532E-05	1.531E-05	1.527E-05	1.514E-05
Th-230	Ra-226+D2	1.998E-04	1.323E-07	3.966E-07	9.229E-07	2.742E-06	7.746E-06	2.319E-05	5.369E-05	8.798E-05
Th-230	Pb-210+D	1.998E-04	1.281E-10	8.731E-10	4.477E-09	3.681E-08	2.497E-07	1.457E-06	4.309E-06	7.552E-06
Th-230	Po-210	1.998E-04	6.021E-11	6.684E-10	4.748E-09	4.775E-08	3.467E-07	2.072E-06	6.161E-06	1.081E-05
Th-230	ΣDSR(j)		1.546E-05	1.572E-05	1.626E-05	1.815E-05	2.366E-05	4.203E-05	7.943E-05	1.215E-04
Th-230	Th-230	2.637E-10	2.023E-11	2.023E-11	2.023E-11	2.023E-11	2.022E-11	2.020E-11	2.016E-11	1.999E-11
Th-230	Ra-226+D2	2.637E-10	1.746E-13	5.235E-13	1.218E-12	3.619E-12	1.022E-11	3.062E-11	7.087E-11	1.161E-10
Th-230	Pb-210+D1	2.637E-10	1.646E-16	1.147E-15	5.943E-15	4.913E-14	3.339E-13	1.950E-12	5.767E-12	1.011E-11
Th-230	ΣDSR(j)		2.040E-11	2.075E-11	2.145E-11	2.390E-11	3.078E-11	5.277E-11	9.680E-11	1.462E-10
Th-230	Th-230	3.795E-12	2.912E-13	2.912E-13	2.912E-13	2.911E-13	2.911E-13	2.908E-13	2.901E-13	2.877E-13
Th-230	Ra-226+D2	3.795E-12	2.513E-15	7.535E-15	1.754E-14	5.210E-14	1.472E-13	4.407E-13	1.020E-12	1.672E-12
Th-230	Pb-210+D2	3.795E-12	4.004E-18	2.784E-17	1.441E-16	1.190E-15	8.087E-15	4.723E-14	1.397E-13	2.448E-13
Th-230	ΣDSR(j)		2.937E-13	2.987E-13	3.088E-13	3.444E-13	4.463E-13	7.788E-13	1.450E-12	2.204E-12
Th-230	Th-230	4.196E-08	3.219E-09	3.219E-09	3.219E-09	3.219E-09	3.218E-09	3.215E-09	3.207E-09	3.181E-09
Th-230	Ra-226+D3	4.196E-08	7.571E-11	2.269E-10	5.280E-10	1.569E-09	4.431E-09	1.327E-08	3.071E-08	5.033E-08
Th-230	Pb-210+D	4.196E-08	2.690E-14	1.834E-13	9.403E-13	7.731E-12	5.244E-11	3.061E-10	9.051E-10	1.586E-09
Th-230	Po-210	4.196E-08	1.265E-14	1.404E-13	9.972E-13	1.003E-11	7.282E-11	4.352E-10	1.294E-09	2.270E-09
Th-230	ΣDSR(j)		3.295E-09	3.446E-09	3.749E-09	4.805E-09	7.774E-09	1.722E-08	3.612E-08	5.736E-08
Th-230	Th-230	5.538E-14	4.249E-15	4.249E-15	4.249E-15	4.248E-15	4.247E-15	4.244E-15	4.234E-15	4.198E-15
Th-230	Ra-226+D3	5.538E-14	9.993E-17	2.995E-16	6.969E-16	2.070E-15	5.849E-15	1.751E-14	4.054E-14	6.643E-14
Th-230	Pb-210+D1	5.538E-14	3.458E-20	2.410E-19	1.248E-18	1.032E-17	7.013E-17	4.096E-16	1.211E-15	2.123E-15
Th-230	ΣDSR(j)		4.349E-15	4.549E-15	4.947E-15	6.329E-15	1.017E-14	2.217E-14	4.599E-14	7.275E-14
Th-230	Th-230	7.972E-16	6.116E-17	6.116E-17	6.116E-17	6.115E-17	6.114E-17	6.109E-17	6.094E-17	6.043E-17
Th-230	Ra-226+D3	7.972E-16	1.438E-18	4.311E-18	1.003E-17	2.980E-17	8.418E-17	2.521E-16	5.835E-16	9.562E-16
Th-230	Pb-210+D2	7.972E-16	8.411E-22	5.848E-21	3.026E-20	2.500E-19	1.699E-18	9.920E-18	2.934E-17	5.142E-17
Th-230	ΣDSR(j)		6.260E-17	6.548E-17	7.122E-17	9.120E-17	1.470E-16	3.231E-16	6.738E-16	1.068E-15

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.000E-07	1.534E-08	1.534E-08	1.534E-08	1.534E-08	1.534E-08	1.533E-08	1.529E-08	1.516E-08
Th-230	Ra-226+D4	2.000E-07	7.868E-12	2.380E-11	5.555E-11	1.653E-10	4.672E-10	1.399E-09	3.240E-09	5.309E-09
Th-230	Pb-210+D	2.000E-07	1.282E-13	8.742E-13	4.482E-12	3.685E-11	2.500E-10	1.459E-09	4.314E-09	7.561E-09
Th-230	Po-210	2.000E-07	6.028E-14	6.692E-13	4.753E-12	4.780E-11	3.471E-10	2.074E-09	6.168E-09	1.082E-08
Th-230	ΣDSR(j)		1.535E-08	1.537E-08	1.541E-08	1.559E-08	1.640E-08	2.026E-08	2.901E-08	3.885E-08
Th-230	Th-230	2.640E-13	2.025E-14	2.025E-14	2.025E-14	2.025E-14	2.025E-14	2.023E-14	2.018E-14	2.001E-14
Th-230	Ra-226+D4	2.640E-13	1.039E-17	3.141E-17	7.333E-17	2.182E-16	6.168E-16	1.847E-15	4.276E-15	7.007E-15
Th-230	Pb-210+D1	2.640E-13	1.648E-19	1.149E-18	5.950E-18	4.919E-17	3.343E-16	1.952E-15	5.774E-15	1.012E-14
Th-230	ΣDSR(j)		2.026E-14	2.029E-14	2.033E-14	2.052E-14	2.120E-14	2.403E-14	3.023E-14	3.714E-14
Th-230	Th-230	3.800E-15	2.915E-16	2.915E-16	2.915E-16	2.915E-16	2.914E-16	2.912E-16	2.905E-16	2.881E-16
Th-230	Ra-226+D4	3.800E-15	1.495E-19	4.521E-19	1.056E-18	3.141E-18	8.878E-18	2.659E-17	6.155E-17	1.009E-16
Th-230	Pb-210+D2	3.800E-15	4.009E-21	2.788E-20	1.442E-19	1.192E-18	8.097E-18	4.729E-17	1.399E-16	2.451E-16
Th-230	ΣDSR(j)		2.917E-16	2.920E-16	2.927E-16	2.958E-16	3.084E-16	3.651E-16	4.919E-16	6.340E-16
U-234	U-234	9.996E-01	1.745E-02	1.739E-02	1.728E-02	1.688E-02	1.580E-02	1.252E-02	6.442E-03	6.297E-04
U-234	Th-230	9.996E-01	3.526E-07	1.055E-06	2.454E-06	7.276E-06	2.045E-05	6.021E-05	1.338E-04	2.028E-04
U-234	Ra-226+D	9.996E-01	2.292E-09	1.602E-08	8.440E-08	7.445E-07	6.027E-06	5.684E-05	3.450E-04	1.186E-03
U-234	Pb-210+D	9.996E-01	1.488E-12	2.171E-11	2.461E-10	6.072E-09	1.237E-07	2.560E-06	2.259E-05	8.901E-05
U-234	Po-210	9.996E-01	5.867E-13	1.409E-11	2.324E-10	7.499E-09	1.686E-07	3.619E-06	3.224E-05	1.274E-04
U-234	ΣDSR(j)		1.745E-02	1.740E-02	1.728E-02	1.689E-02	1.582E-02	1.264E-02	6.976E-03	2.235E-03
U-234	U-234	1.319E-06	2.304E-08	2.296E-08	2.281E-08	2.228E-08	2.085E-08	1.653E-08	8.504E-09	8.313E-10
U-234	Th-230	1.319E-06	4.654E-13	1.393E-12	3.239E-12	9.605E-12	2.699E-11	7.948E-11	1.766E-10	2.677E-10
U-234	Ra-226+D	1.319E-06	3.025E-15	2.115E-14	1.114E-13	9.827E-13	7.956E-12	7.503E-11	4.554E-10	1.566E-09
U-234	Pb-210+D1	1.319E-06	1.890E-18	2.831E-17	3.254E-16	8.094E-15	1.653E-13	3.426E-12	3.023E-11	1.191E-10
U-234	ΣDSR(j)		2.304E-08	2.296E-08	2.281E-08	2.229E-08	2.089E-08	1.668E-08	9.166E-09	2.784E-09
U-234	U-234	1.899E-08	3.316E-10	3.305E-10	3.283E-10	3.208E-10	3.001E-10	2.379E-10	1.224E-10	1.197E-11
U-234	Th-230	1.899E-08	6.699E-15	2.005E-14	4.663E-14	1.383E-13	3.886E-13	1.144E-12	2.542E-12	3.854E-12
U-234	Ra-226+D	1.899E-08	4.354E-17	3.045E-16	1.604E-15	1.414E-14	1.145E-13	1.080E-12	6.554E-12	2.254E-11
U-234	Pb-210+D2	1.899E-08	4.602E-20	6.875E-19	7.891E-18	1.961E-16	4.004E-15	8.297E-14	7.323E-13	2.885E-12
U-234	ΣDSR(j)		3.316E-10	3.305E-10	3.284E-10	3.209E-10	3.006E-10	2.402E-10	1.322E-10	4.125E-11
U-234	U-234	2.100E-04	3.666E-06	3.654E-06	3.629E-06	3.546E-06	3.318E-06	2.630E-06	1.353E-06	1.323E-07
U-234	Th-230	2.100E-04	7.405E-11	2.217E-10	5.155E-10	1.528E-09	4.295E-09	1.265E-08	2.810E-08	4.260E-08
U-234	Ra-226+D1	2.100E-04	1.216E-12	8.499E-12	4.475E-11	3.947E-10	3.196E-09	3.014E-08	1.829E-07	6.290E-07
U-234	Pb-210+D	2.100E-04	3.125E-16	4.560E-15	5.169E-14	1.275E-12	2.598E-11	5.378E-10	4.745E-09	1.870E-08
U-234	Po-210	2.100E-04	1.232E-16	2.960E-15	4.882E-14	1.575E-12	3.541E-11	7.603E-10	6.773E-09	2.676E-08
U-234	ΣDSR(j)		3.666E-06	3.654E-06	3.630E-06	3.548E-06	3.326E-06	2.674E-06	1.576E-06	8.493E-07
U-234	U-234	2.771E-10	4.839E-12	4.823E-12	4.791E-12	4.681E-12	4.380E-12	3.471E-12	1.786E-12	1.746E-13
U-234	Th-230	2.771E-10	9.775E-17	2.926E-16	6.804E-16	2.017E-15	5.670E-15	1.669E-14	3.709E-14	5.624E-14
U-234	Ra-226+D1	2.771E-10	1.605E-18	1.122E-17	5.907E-17	5.210E-16	4.218E-15	3.978E-14	2.414E-13	8.303E-13
U-234	Pb-210+D1	2.771E-10	3.969E-22	5.946E-21	6.835E-20	1.700E-18	3.472E-17	7.195E-16	6.350E-15	2.502E-14
U-234	ΣDSR(j)		4.839E-12	4.823E-12	4.792E-12	4.683E-12	4.390E-12	3.528E-12	2.071E-12	1.086E-12

Summary : Residential (Rural)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	3.989E-12	6.965E-14	6.942E-14	6.896E-14	6.737E-14	6.304E-14	4.996E-14	2.571E-14	2.513E-15
U-234	Th-230	3.989E-12	1.407E-18	4.212E-18	9.794E-18	2.904E-17	8.161E-17	2.403E-16	5.338E-16	8.095E-16
U-234	Ra-226+D1	3.989E-12	2.310E-20	1.615E-19	8.503E-19	7.500E-18	6.072E-17	5.726E-16	3.475E-15	1.195E-14
U-234	Pb-210+D2	3.989E-12	9.667E-24	1.444E-22	1.657E-21	4.119E-20	8.410E-19	1.743E-17	1.538E-16	6.060E-16
U-234	ΣDSR(j)		6.965E-14	6.942E-14	6.897E-14	6.741E-14	6.319E-14	5.079E-14	2.987E-14	1.588E-14
U-234	U-234	1.998E-04	3.488E-06	3.476E-06	3.453E-06	3.374E-06	3.157E-06	2.502E-06	1.287E-06	1.258E-07
U-234	Th-230	1.998E-04	7.046E-11	2.109E-10	4.904E-10	1.454E-09	4.087E-09	1.203E-08	2.673E-08	4.053E-08
U-234	Ra-226+D2	1.998E-04	4.050E-13	2.832E-12	1.492E-11	1.316E-10	1.065E-09	1.005E-08	6.097E-08	2.097E-07
U-234	Pb-210+D	1.998E-04	2.973E-16	4.339E-15	4.918E-14	1.213E-12	2.471E-11	5.116E-10	4.515E-09	1.779E-08
U-234	Po-210	1.998E-04	1.173E-16	2.817E-15	4.645E-14	1.499E-12	3.369E-11	7.233E-10	6.444E-09	2.546E-08
U-234	ΣDSR(j)		3.488E-06	3.476E-06	3.454E-06	3.375E-06	3.162E-06	2.525E-06	1.386E-06	4.193E-07
U-234	U-234	2.637E-10	4.604E-12	4.588E-12	4.558E-12	4.453E-12	4.167E-12	3.302E-12	1.699E-12	1.661E-13
U-234	Th-230	2.637E-10	9.300E-17	2.784E-16	6.474E-16	1.919E-15	5.395E-15	1.588E-14	3.529E-14	5.350E-14
U-234	Ra-226+D2	2.637E-10	5.345E-19	3.738E-18	1.969E-17	1.737E-16	1.406E-15	1.326E-14	8.048E-14	2.768E-13
U-234	Pb-210+D1	2.637E-10	3.776E-22	5.657E-21	6.503E-20	1.617E-18	3.303E-17	6.846E-16	6.042E-15	2.381E-14
U-234	ΣDSR(j)		4.604E-12	4.589E-12	4.559E-12	4.455E-12	4.174E-12	3.332E-12	1.821E-12	5.202E-13
U-234	U-234	3.795E-12	6.627E-14	6.605E-14	6.561E-14	6.410E-14	5.998E-14	4.754E-14	2.446E-14	2.391E-15
U-234	Th-230	3.795E-12	1.339E-18	4.007E-18	9.318E-18	2.763E-17	7.765E-17	2.286E-16	5.079E-16	7.701E-16
U-234	Ra-226+D2	3.795E-12	7.694E-21	5.381E-20	2.834E-19	2.500E-18	2.024E-17	1.909E-16	1.158E-15	3.984E-15
U-234	Pb-210+D2	3.795E-12	9.197E-24	1.374E-22	1.577E-21	3.919E-20	8.002E-19	1.658E-17	1.463E-16	5.766E-16
U-234	ΣDSR(j)		6.627E-14	6.605E-14	6.562E-14	6.413E-14	6.008E-14	4.797E-14	2.627E-14	7.722E-15
U-234	U-234	4.196E-08	7.326E-10	7.301E-10	7.253E-10	7.086E-10	6.631E-10	5.255E-10	2.704E-10	2.643E-11
U-234	Th-230	4.196E-08	1.480E-14	4.430E-14	1.030E-13	3.054E-13	8.584E-13	2.528E-12	5.615E-12	8.514E-12
U-234	Ra-226+D3	4.196E-08	2.319E-16	1.621E-15	8.534E-15	7.527E-14	6.094E-13	5.747E-12	3.488E-11	1.199E-10
U-234	Pb-210+D	4.196E-08	6.244E-20	9.113E-19	1.033E-17	2.549E-16	5.191E-15	1.075E-13	9.483E-13	3.736E-12
U-234	Po-210	4.196E-08	2.463E-20	5.916E-19	9.756E-18	3.148E-16	7.077E-15	1.519E-13	1.353E-12	5.347E-12
U-234	ΣDSR(j)		7.326E-10	7.302E-10	7.254E-10	7.090E-10	6.646E-10	5.340E-10	3.132E-10	1.640E-10
U-234	U-234	5.538E-14	9.670E-16	9.638E-16	9.574E-16	9.354E-16	8.753E-16	6.937E-16	3.569E-16	3.489E-17
U-234	Th-230	5.538E-14	1.953E-20	5.848E-20	1.360E-19	4.032E-19	1.133E-18	3.336E-18	7.412E-18	1.124E-17
U-234	Ra-226+D3	5.538E-14	3.061E-22	2.139E-21	1.126E-20	9.936E-20	8.044E-19	7.586E-18	4.604E-17	1.583E-16
U-234	Pb-210+D1	5.538E-14	7.931E-26	1.188E-24	1.366E-23	3.397E-22	6.938E-21	1.438E-19	1.269E-18	5.000E-18
U-234	ΣDSR(j)		9.670E-16	9.638E-16	9.575E-16	9.359E-16	8.772E-16	7.047E-16	4.117E-16	2.095E-16
U-234	U-234	7.972E-16	1.392E-17	1.387E-17	1.378E-17	1.346E-17	1.260E-17	9.985E-18	5.138E-18	5.022E-19
U-234	Th-230	7.972E-16	2.812E-22	8.417E-22	1.957E-21	5.803E-21	1.631E-20	4.802E-20	1.067E-19	1.618E-19
U-234	Ra-226+D3	7.972E-16	4.405E-24	3.079E-23	1.621E-22	1.430E-21	1.158E-20	1.092E-19	6.627E-19	2.279E-18
U-234	Pb-210+D2	7.972E-16	1.932E-27	2.886E-26	3.312E-25	8.232E-24	1.681E-22	3.483E-21	3.074E-20	1.211E-19
U-234	ΣDSR(j)		1.392E-17	1.387E-17	1.378E-17	1.347E-17	1.263E-17	1.015E-17	5.938E-18	3.064E-18

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.000E-07	3.492E-09	3.480E-09	3.457E-09	3.378E-09	3.161E-09	2.505E-09	1.289E-09	1.260E-10
U-234	Th-230	2.000E-07	7.054E-14	2.112E-13	4.910E-13	1.456E-12	4.092E-12	1.205E-11	2.676E-11	4.058E-11
U-234	Ra-226+D4	2.000E-07	2.385E-17	1.690E-16	8.957E-16	7.926E-15	6.424E-14	6.061E-13	3.679E-12	1.265E-11
U-234	Pb-210+D	2.000E-07	2.976E-19	4.344E-18	4.923E-17	1.215E-15	2.474E-14	5.123E-13	4.520E-12	1.781E-11
U-234	Po-210	2.000E-07	1.174E-19	2.820E-18	4.650E-17	1.500E-15	3.373E-14	7.242E-13	6.451E-12	2.549E-11
U-234	ΣDSR(j)		3.492E-09	3.481E-09	3.458E-09	3.379E-09	3.165E-09	2.519E-09	1.330E-09	2.225E-10
U-234	U-234	2.640E-13	4.609E-15	4.594E-15	4.564E-15	4.459E-15	4.172E-15	3.306E-15	1.701E-15	1.663E-16
U-234	Th-230	2.640E-13	9.311E-20	2.788E-19	6.481E-19	1.922E-18	5.401E-18	1.590E-17	3.533E-17	5.357E-17
U-234	Ra-226+D4	2.640E-13	3.148E-23	2.231E-22	1.182E-21	1.046E-20	8.480E-20	8.000E-19	4.856E-18	1.670E-17
U-234	Pb-210+D1	2.640E-13	3.781E-25	5.664E-24	6.510E-23	1.619E-21	3.307E-20	6.854E-19	6.049E-18	2.383E-17
U-234	ΣDSR(j)		4.609E-15	4.594E-15	4.564E-15	4.461E-15	4.178E-15	3.324E-15	1.748E-15	2.604E-16
U-234	U-234	3.800E-15	6.635E-17	6.613E-17	6.569E-17	6.418E-17	6.005E-17	4.759E-17	2.449E-17	2.394E-18
U-234	Th-230	3.800E-15	1.340E-21	4.012E-21	9.329E-21	2.766E-20	7.774E-20	2.289E-19	5.085E-19	7.711E-19
U-234	Ra-226+D4	3.800E-15	4.531E-25	3.212E-24	1.702E-23	1.506E-22	1.221E-21	1.152E-20	6.990E-20	2.404E-19
U-234	Pb-210+D2	3.800E-15	9.208E-27	1.376E-25	1.579E-24	3.924E-23	8.012E-22	1.660E-20	1.465E-19	5.773E-19
U-234	ΣDSR(j)		6.635E-17	6.613E-17	6.570E-17	6.421E-17	6.013E-17	4.785E-17	2.522E-17	3.983E-18
U-238	U-238	5.450E-07	8.539E-09	8.511E-09	8.455E-09	8.260E-09	7.730E-09	6.127E-09	3.155E-09	3.090E-10
U-238+D	U-238+D	1.599E-03	4.255E-03	4.241E-03	4.213E-03	4.116E-03	3.852E-03	3.053E-03	1.572E-03	1.540E-04
U-238+D	U-234	1.599E-03	3.940E-11	1.178E-10	2.732E-10	8.008E-10	2.177E-09	5.685E-09	8.749E-09	2.850E-09
U-238+D	Th-230	1.599E-03	5.310E-16	3.706E-15	1.950E-14	1.717E-13	1.385E-12	1.291E-11	7.600E-11	2.423E-10
U-238+D	Ra-226+D	1.599E-03	2.586E-18	3.875E-17	4.502E-16	1.175E-14	2.742E-13	8.325E-12	1.409E-10	1.214E-09
U-238+D	Pb-210+D	1.599E-03	1.355E-21	4.082E-20	9.994E-19	7.318E-17	4.412E-15	3.160E-13	8.515E-12	8.949E-11
U-238+D	Po-210	1.599E-03	4.611E-22	2.318E-20	8.533E-19	8.630E-17	5.909E-15	4.442E-13	1.213E-11	1.280E-10
U-238+D	ΣDSR(j)		4.255E-03	4.241E-03	4.213E-03	4.116E-03	3.852E-03	3.053E-03	1.572E-03	1.540E-04
U-238+D	U-238+D	2.111E-09	5.617E-09	5.598E-09	5.561E-09	5.434E-09	5.085E-09	4.030E-09	2.075E-09	2.032E-10
U-238+D	U-234	2.111E-09	5.201E-17	1.556E-16	3.606E-16	1.057E-15	2.873E-15	7.504E-15	1.155E-14	3.762E-15
U-238+D	Th-230	2.111E-09	7.009E-22	4.892E-21	2.574E-20	2.267E-19	1.829E-18	1.705E-17	1.003E-16	3.198E-16
U-238+D	Ra-226+D	2.111E-09	3.414E-24	5.115E-23	5.943E-22	1.551E-20	3.619E-19	1.099E-17	1.860E-16	1.602E-15
U-238+D	Pb-210+D1	2.111E-09	1.703E-27	5.286E-26	1.316E-24	9.741E-23	5.894E-21	4.227E-19	1.139E-17	1.198E-16
U-238+D	ΣDSR(j)		5.617E-09	5.598E-09	5.561E-09	5.434E-09	5.085E-09	4.030E-09	2.075E-09	2.033E-10
U-238+D	U-238+D	3.039E-11	8.085E-11	8.058E-11	8.005E-11	7.821E-11	7.319E-11	5.801E-11	2.987E-11	2.926E-12
U-238+D	U-234	3.039E-11	7.486E-19	2.239E-18	5.190E-18	1.521E-17	4.136E-17	1.080E-16	1.662E-16	5.415E-17
U-238+D	Th-230	3.039E-11	1.009E-23	7.042E-23	3.704E-22	3.263E-21	2.632E-20	2.454E-19	1.444E-18	4.604E-18
U-238+D	Ra-226+D	3.039E-11	4.913E-26	7.362E-25	8.554E-24	2.232E-22	5.209E-21	1.582E-19	2.677E-18	2.307E-17
U-238+D	Pb-210+D2	3.039E-11	4.154E-29	1.285E-27	3.194E-26	2.361E-24	1.428E-22	1.024E-20	2.760E-19	2.901E-18
U-238+D	ΣDSR(j)		8.085E-11	8.058E-11	8.005E-11	7.821E-11	7.319E-11	5.801E-11	2.987E-11	2.926E-12

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	3.359E-07	8.938E-07	8.908E-07	8.849E-07	8.646E-07	8.091E-07	6.413E-07	3.302E-07	3.234E-08
U-238+D	U-234	3.359E-07	8.275E-15	2.475E-14	5.738E-14	1.682E-13	4.572E-13	1.194E-12	1.838E-12	5.987E-13
U-238+D	Th-230	3.359E-07	1.115E-19	7.785E-19	4.095E-18	3.607E-17	2.910E-16	2.712E-15	1.596E-14	5.089E-14
U-238+D	Ra-226+D1	3.359E-07	1.372E-21	2.055E-20	2.388E-19	6.229E-18	1.454E-16	4.414E-15	7.471E-14	6.436E-13
U-238+D	Pb-210+D	3.359E-07	2.847E-25	8.575E-24	2.099E-22	1.537E-20	9.267E-19	6.637E-17	1.789E-15	1.880E-14
U-238+D	Po-210	3.359E-07	9.686E-26	4.870E-24	1.792E-22	1.813E-20	1.241E-18	9.330E-17	2.548E-15	2.689E-14
U-238+D	ΣDSR(j)		8.938E-07	8.908E-07	8.849E-07	8.646E-07	8.091E-07	6.413E-07	3.302E-07	3.234E-08
U-238+D	U-238+D	4.434E-13	1.180E-12	1.176E-12	1.168E-12	1.141E-12	1.068E-12	8.466E-13	4.359E-13	4.269E-14
U-238+D	U-234	4.434E-13	1.092E-20	3.267E-20	7.574E-20	2.220E-19	6.035E-19	1.576E-18	2.426E-18	7.903E-19
U-238+D	Th-230	4.434E-13	1.472E-25	1.028E-24	5.406E-24	4.761E-23	3.841E-22	3.580E-21	2.107E-20	6.718E-20
U-238+D	Ra-226+D1	4.434E-13	1.812E-27	2.713E-26	3.152E-25	8.223E-24	1.919E-22	5.826E-21	9.861E-20	8.496E-19
U-238+D	Pb-210+D1	4.434E-13	3.577E-31	1.110E-29	2.765E-28	2.046E-26	1.238E-24	8.879E-23	2.393E-21	2.516E-20
U-238+D	ΣDSR(j)		1.180E-12	1.176E-12	1.168E-12	1.141E-12	1.068E-12	8.466E-13	4.359E-13	4.269E-14
U-238+D	U-238+D	6.383E-15	1.698E-14	1.693E-14	1.681E-14	1.643E-14	1.537E-14	1.219E-14	6.274E-15	6.145E-16
U-238+D	U-234	6.383E-15	1.572E-22	4.703E-22	1.090E-21	3.196E-21	8.686E-21	2.269E-20	3.492E-20	1.137E-20
U-238+D	Th-230	6.383E-15	2.119E-27	1.479E-26	7.781E-26	6.853E-25	5.529E-24	5.154E-23	3.033E-22	9.670E-22
U-238+D	Ra-226+D1	6.383E-15	2.608E-29	3.905E-28	4.536E-27	1.184E-25	2.762E-24	8.386E-23	1.419E-21	1.223E-20
U-238+D	Pb-210+D2	6.383E-15	8.724E-33	2.698E-31	6.708E-30	4.958E-28	2.999E-26	2.151E-24	5.797E-23	6.093E-22
U-238+D	ΣDSR(j)		1.698E-14	1.693E-14	1.681E-14	1.643E-14	1.537E-14	1.219E-14	6.274E-15	6.145E-16
U-238+D	U-238+D	3.196E-07	8.504E-07	8.476E-07	8.420E-07	8.226E-07	7.698E-07	6.102E-07	3.142E-07	3.077E-08
U-238+D	U-234	3.196E-07	7.873E-15	2.355E-14	5.459E-14	1.600E-13	4.350E-13	1.136E-12	1.748E-12	5.696E-13
U-238+D	Th-230	3.196E-07	1.061E-19	7.406E-19	3.896E-18	3.431E-17	2.768E-16	2.581E-15	1.519E-14	4.842E-14
U-238+D	Ra-226+D2	3.196E-07	4.569E-22	6.848E-21	7.957E-20	2.076E-18	4.846E-17	1.471E-15	2.491E-14	2.146E-13
U-238+D	Pb-210+D	3.196E-07	2.709E-25	8.158E-24	1.997E-22	1.462E-20	8.817E-19	6.315E-17	1.702E-15	1.788E-14
U-238+D	Po-210	3.196E-07	9.216E-26	4.633E-24	1.705E-22	1.725E-20	1.181E-18	8.877E-17	2.424E-15	2.559E-14
U-238+D	ΣDSR(j)		8.504E-07	8.476E-07	8.420E-07	8.226E-07	7.698E-07	6.102E-07	3.142E-07	3.077E-08
U-238+D	U-238+D	4.219E-13	1.123E-12	1.119E-12	1.111E-12	1.086E-12	1.016E-12	8.055E-13	4.147E-13	4.062E-14
U-238+D	U-234	4.219E-13	1.039E-20	3.109E-20	7.206E-20	2.112E-19	5.742E-19	1.500E-18	2.308E-18	7.519E-19
U-238+D	Th-230	4.219E-13	1.401E-25	9.776E-25	5.143E-24	4.530E-23	3.654E-22	3.406E-21	2.005E-20	6.391E-20
U-238+D	Ra-226+D2	4.219E-13	6.032E-28	9.039E-27	1.050E-25	2.741E-24	6.397E-23	1.942E-21	3.288E-20	2.832E-19
U-238+D	Pb-210+D1	4.219E-13	3.404E-31	1.056E-29	2.631E-28	1.947E-26	1.178E-24	8.448E-23	2.277E-21	2.394E-20
U-238+D	ΣDSR(j)		1.123E-12	1.119E-12	1.111E-12	1.086E-12	1.016E-12	8.055E-13	4.147E-13	4.062E-14
U-238+D	U-238+D	6.073E-15	1.616E-14	1.610E-14	1.600E-14	1.563E-14	1.463E-14	1.159E-14	5.969E-15	5.846E-16
U-238+D	U-234	6.073E-15	1.496E-22	4.475E-22	1.037E-21	3.040E-21	8.264E-21	2.158E-20	3.322E-20	1.082E-20
U-238+D	Th-230	6.073E-15	2.016E-27	1.407E-26	7.403E-26	6.520E-25	5.260E-24	4.903E-23	2.886E-22	9.200E-22
U-238+D	Ra-226+D2	6.073E-15	8.682E-30	1.301E-28	1.512E-27	3.945E-26	9.207E-25	2.796E-23	4.732E-22	4.077E-21
U-238+D	Pb-210+D2	6.073E-15	8.300E-33	2.567E-31	6.382E-30	4.717E-28	2.853E-26	2.046E-24	5.515E-23	5.797E-22
U-238+D	ΣDSR(j)		1.616E-14	1.610E-14	1.600E-14	1.563E-14	1.463E-14	1.159E-14	5.969E-15	5.847E-16

Summary : Residential (Rural)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	6.713E-11	1.786E-10	1.780E-10	1.768E-10	1.728E-10	1.617E-10	1.282E-10	6.599E-11	6.463E-12
U-238+D	U-234	6.713E-11	1.654E-18	4.947E-18	1.147E-17	3.361E-17	9.136E-17	2.386E-16	3.672E-16	1.196E-16
U-238+D	Th-230	6.713E-11	2.229E-23	1.556E-22	8.184E-22	7.208E-21	5.815E-20	5.421E-19	3.190E-18	1.017E-17
U-238+D	Ra-226+D3	6.713E-11	2.617E-25	3.919E-24	4.553E-23	1.188E-21	2.772E-20	8.417E-19	1.425E-17	1.227E-16
U-238+D	Pb-210+D	6.713E-11	5.689E-29	1.714E-27	4.195E-26	3.072E-24	1.852E-22	1.326E-20	3.574E-19	3.756E-18
U-238+D	Po-210	6.713E-11	1.936E-29	9.732E-28	3.582E-26	3.622E-24	2.480E-22	1.865E-20	5.092E-19	5.374E-18
U-238+D	ΣDSR(j)		1.786E-10	1.780E-10	1.768E-10	1.728E-10	1.617E-10	1.282E-10	6.599E-11	6.463E-12
U-238+D	U-238+D	8.862E-17	2.358E-16	2.350E-16	2.334E-16	2.281E-16	2.134E-16	1.692E-16	8.711E-17	8.531E-18
U-238+D	U-234	8.862E-17	2.183E-24	6.530E-24	1.514E-23	4.437E-23	1.206E-22	3.150E-22	4.848E-22	1.579E-22
U-238+D	Th-230	8.862E-17	2.942E-29	2.053E-28	1.080E-27	9.514E-27	7.676E-26	7.155E-25	4.211E-24	1.342E-23
U-238+D	Ra-226+D3	8.862E-17	3.455E-31	5.174E-30	6.010E-29	1.568E-27	3.659E-26	1.111E-24	1.880E-23	1.620E-22
U-238+D	Pb-210+D1	8.862E-17	7.149E-35	2.219E-33	5.526E-32	4.089E-30	2.474E-28	1.774E-26	4.783E-25	5.028E-24
U-238+D	ΣDSR(j)		2.358E-16	2.350E-16	2.334E-16	2.281E-16	2.134E-16	1.692E-16	8.711E-17	8.532E-18
U-238+D	U-238+D	1.276E-18	3.394E-18	3.382E-18	3.360E-18	3.283E-18	3.072E-18	2.435E-18	1.254E-18	1.228E-19
U-238+D	U-234	1.276E-18	3.142E-26	9.399E-26	2.179E-25	6.386E-25	1.736E-24	4.534E-24	6.978E-24	2.273E-24
U-238+D	Th-230	1.276E-18	4.235E-31	2.956E-30	1.555E-29	1.369E-28	1.105E-27	1.030E-26	6.062E-26	1.932E-25
U-238+D	Ra-226+D3	1.276E-18	4.973E-33	7.447E-32	8.650E-31	2.257E-29	5.267E-28	1.599E-26	2.707E-25	2.332E-24
U-238+D	Pb-210+D2	1.276E-18	1.743E-36	5.393E-35	1.341E-33	9.908E-32	5.993E-30	4.298E-28	1.158E-26	1.218E-25
U-238+D	ΣDSR(j)		3.394E-18	3.382E-18	3.360E-18	3.283E-18	3.072E-18	2.435E-18	1.254E-18	1.228E-19
U-238+D	U-238+D	3.200E-10	8.514E-10	8.486E-10	8.430E-10	8.236E-10	7.707E-10	6.109E-10	3.146E-10	3.081E-11
U-238+D	U-234	3.200E-10	7.883E-18	2.358E-17	5.466E-17	1.602E-16	4.355E-16	1.137E-15	1.751E-15	5.703E-16
U-238+D	Th-230	3.200E-10	1.062E-22	7.415E-22	3.901E-21	3.436E-20	2.772E-19	2.584E-18	1.521E-17	4.848E-17
U-238+D	Ra-226+D4	3.200E-10	2.670E-26	4.068E-25	4.767E-24	1.250E-22	2.921E-21	8.876E-20	1.503E-18	1.295E-17
U-238+D	Pb-210+D	3.200E-10	2.712E-28	8.168E-27	2.000E-25	1.464E-23	8.828E-22	6.322E-20	1.704E-18	1.791E-17
U-238+D	Po-210	3.200E-10	9.227E-29	4.639E-27	1.707E-25	1.727E-23	1.182E-21	8.888E-20	2.427E-18	2.562E-17
U-238+D	ΣDSR(j)		8.514E-10	8.486E-10	8.430E-10	8.236E-10	7.707E-10	6.109E-10	3.146E-10	3.081E-11
U-238+D	U-238+D	4.224E-16	1.124E-15	1.120E-15	1.113E-15	1.087E-15	1.017E-15	8.064E-16	4.152E-16	4.067E-17
U-238+D	U-234	4.224E-16	1.041E-23	3.112E-23	7.215E-23	2.115E-22	5.749E-22	1.501E-21	2.311E-21	7.528E-22
U-238+D	Th-230	4.224E-16	1.402E-28	9.788E-28	5.149E-27	4.535E-26	3.659E-25	3.411E-24	2.007E-23	6.399E-23
U-238+D	Ra-226+D4	4.224E-16	3.524E-32	5.370E-31	6.292E-30	1.650E-28	3.856E-27	1.172E-25	1.983E-24	1.709E-23
U-238+D	Pb-210+D1	4.224E-16	3.408E-34	1.058E-32	2.634E-31	1.949E-29	1.179E-27	8.458E-26	2.280E-24	2.396E-23
U-238+D	ΣDSR(j)		1.124E-15	1.120E-15	1.113E-15	1.087E-15	1.017E-15	8.064E-16	4.152E-16	4.067E-17
U-238+D	U-238+D	6.080E-18	1.618E-17	1.612E-17	1.602E-17	1.565E-17	1.464E-17	1.161E-17	5.977E-18	5.853E-19
U-238+D	U-234	6.080E-18	1.498E-25	4.480E-25	1.039E-24	3.044E-24	8.274E-24	2.161E-23	3.326E-23	1.084E-23
U-238+D	Th-230	6.080E-18	2.019E-30	1.409E-29	7.412E-29	6.528E-28	5.266E-27	4.909E-26	2.889E-25	9.211E-25
U-238+D	Ra-226+D4	6.080E-18	5.072E-34	7.729E-33	9.057E-32	2.375E-30	5.551E-29	1.686E-27	2.855E-26	2.460E-25
U-238+D	Pb-210+D2	6.080E-18	8.310E-36	2.570E-34	6.390E-33	4.723E-31	2.857E-29	2.049E-27	5.522E-26	5.804E-25
U-238+D	ΣDSR(j)		1.618E-17	1.612E-17	1.602E-17	1.565E-17	1.464E-17	1.161E-17	5.977E-18	5.854E-19

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	9.980E-01	6.366E-02	6.345E-02	6.303E-02	6.158E-02	5.763E-02	4.568E-02	2.352E-02	2.303E-03
U-238+D1	U-234	9.980E-01	2.458E-08	7.354E-08	1.705E-07	4.997E-07	1.358E-06	3.547E-06	5.459E-06	1.779E-06
U-238+D1	Th-230	9.980E-01	3.313E-13	2.313E-12	1.217E-11	1.071E-10	8.644E-10	8.058E-09	4.743E-08	1.512E-07
U-238+D1	Ra-226+D	9.980E-01	1.614E-15	2.418E-14	2.809E-13	7.331E-12	1.711E-10	5.195E-09	8.793E-08	7.575E-07
U-238+D1	Pb-210+D	9.980E-01	8.458E-19	2.547E-17	6.236E-16	4.566E-14	2.753E-12	1.972E-10	5.313E-09	5.584E-08
U-238+D1	Po-210	9.980E-01	2.878E-19	1.447E-17	5.324E-16	5.385E-14	3.687E-12	2.772E-10	7.570E-09	7.989E-08
U-238+D1	ΣDSR(j)		6.366E-02	6.345E-02	6.303E-02	6.158E-02	5.763E-02	4.568E-02	2.352E-02	2.306E-03
U-238+D1	U-238+D1	1.317E-06	8.403E-08	8.375E-08	8.320E-08	8.129E-08	7.607E-08	6.030E-08	3.104E-08	3.041E-09
U-238+D1	U-234	1.317E-06	3.245E-14	9.707E-14	2.250E-13	6.596E-13	1.793E-12	4.682E-12	7.206E-12	2.348E-12
U-238+D1	Th-230	1.317E-06	4.374E-19	3.053E-18	1.606E-17	1.414E-16	1.141E-15	1.064E-14	6.260E-14	1.996E-13
U-238+D1	Ra-226+D	1.317E-06	2.130E-21	3.192E-20	3.708E-19	9.677E-18	2.258E-16	6.857E-15	1.161E-13	9.999E-13
U-238+D1	Pb-210+D1	1.317E-06	1.063E-24	3.298E-23	8.215E-22	6.078E-20	3.678E-18	2.638E-16	7.110E-15	7.474E-14
U-238+D1	ΣDSR(j)		8.403E-08	8.375E-08	8.320E-08	8.129E-08	7.607E-08	6.030E-08	3.105E-08	3.044E-09
U-238+D1	U-238+D1	1.896E-08	1.210E-09	1.206E-09	1.198E-09	1.170E-09	1.095E-09	8.679E-10	4.469E-10	4.377E-11
U-238+D1	U-234	1.896E-08	4.671E-16	1.397E-15	3.239E-15	9.494E-15	2.581E-14	6.740E-14	1.037E-13	3.379E-14
U-238+D1	Th-230	1.896E-08	6.295E-21	4.394E-20	2.312E-19	2.036E-18	1.642E-17	1.531E-16	9.011E-16	2.873E-15
U-238+D1	Ra-226+D	1.896E-08	3.066E-23	4.594E-22	5.338E-21	1.393E-19	3.251E-18	9.870E-17	1.671E-15	1.439E-14
U-238+D1	Pb-210+D2	1.896E-08	2.592E-26	8.016E-25	1.993E-23	1.473E-21	8.910E-20	6.389E-18	1.722E-16	1.810E-15
U-238+D1	ΣDSR(j)		1.210E-09	1.206E-09	1.198E-09	1.170E-09	1.095E-09	8.680E-10	4.470E-10	4.382E-11
U-238+D1	U-238+D1	2.096E-04	1.337E-05	1.333E-05	1.324E-05	1.293E-05	1.210E-05	9.594E-06	4.940E-06	4.838E-07
U-238+D1	U-234	2.096E-04	5.164E-12	1.545E-11	3.581E-11	1.050E-10	2.853E-10	7.451E-10	1.147E-09	3.736E-10
U-238+D1	Th-230	2.096E-04	6.959E-17	4.858E-16	2.555E-15	2.251E-14	1.816E-13	1.693E-12	9.962E-12	3.176E-11
U-238+D1	Ra-226+D1	2.096E-04	8.564E-19	1.283E-17	1.490E-16	3.887E-15	9.071E-14	2.754E-12	4.662E-11	4.016E-10
U-238+D1	Pb-210+D	2.096E-04	1.776E-22	5.351E-21	1.310E-19	9.591E-18	5.783E-16	4.142E-14	1.116E-12	1.173E-11
U-238+D1	Po-210	2.096E-04	6.044E-23	3.039E-21	1.118E-19	1.131E-17	7.744E-16	5.822E-14	1.590E-12	1.678E-11
U-238+D1	ΣDSR(j)		1.337E-05	1.333E-05	1.324E-05	1.293E-05	1.210E-05	9.595E-06	4.941E-06	4.847E-07
U-238+D1	U-238+D1	2.767E-10	1.765E-11	1.759E-11	1.748E-11	1.707E-11	1.598E-11	1.266E-11	6.521E-12	6.387E-13
U-238+D1	U-234	2.767E-10	6.816E-18	2.039E-17	4.726E-17	1.385E-16	3.766E-16	9.835E-16	1.514E-15	4.931E-16
U-238+D1	Th-230	2.767E-10	9.186E-23	6.412E-22	3.373E-21	2.971E-20	2.397E-19	2.234E-18	1.315E-17	4.192E-17
U-238+D1	Ra-226+D1	2.767E-10	1.130E-24	1.693E-23	1.967E-22	5.131E-21	1.197E-19	3.636E-18	6.154E-17	5.301E-16
U-238+D1	Pb-210+D1	2.767E-10	2.232E-28	6.928E-27	1.725E-25	1.277E-23	7.725E-22	5.540E-20	1.494E-18	1.570E-17
U-238+D1	ΣDSR(j)		1.765E-11	1.759E-11	1.748E-11	1.707E-11	1.598E-11	1.267E-11	6.522E-12	6.397E-13
U-238+D1	U-238+D1	3.983E-12	2.541E-13	2.532E-13	2.515E-13	2.458E-13	2.300E-13	1.823E-13	9.386E-14	9.193E-15
U-238+D1	U-234	3.983E-12	9.811E-20	2.935E-19	6.803E-19	1.994E-18	5.420E-18	1.416E-17	2.179E-17	7.098E-18
U-238+D1	Th-230	3.983E-12	1.322E-24	9.229E-24	4.855E-23	4.276E-22	3.450E-21	3.216E-20	1.893E-19	6.034E-19
U-238+D1	Ra-226+D1	3.983E-12	1.627E-26	2.437E-25	2.831E-24	7.385E-23	1.723E-21	5.233E-20	8.857E-19	7.631E-18
U-238+D1	Pb-210+D2	3.983E-12	5.444E-30	1.684E-28	4.186E-27	3.094E-25	1.871E-23	1.342E-21	3.617E-20	3.802E-19
U-238+D1	ΣDSR(j)		2.541E-13	2.532E-13	2.515E-13	2.458E-13	2.300E-13	1.823E-13	9.388E-14	9.208E-15

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.994E-04	1.272E-05	1.268E-05	1.260E-05	1.231E-05	1.152E-05	9.128E-06	4.700E-06	4.603E-07
U-238+D1	U-234	1.994E-04	4.913E-12	1.470E-11	3.407E-11	9.985E-11	2.714E-10	7.089E-10	1.091E-09	3.554E-10
U-238+D1	Th-230	1.994E-04	6.621E-17	4.622E-16	2.431E-15	2.141E-14	1.728E-13	1.610E-12	9.478E-12	3.021E-11
U-238+D1	Ra-226+D2	1.994E-04	2.851E-19	4.273E-18	4.965E-17	1.296E-15	3.024E-14	9.182E-13	1.554E-11	1.339E-10
U-238+D1	Pb-210+D	1.994E-04	1.690E-22	5.091E-21	1.246E-19	9.125E-18	5.502E-16	3.940E-14	1.062E-12	1.116E-11
U-238+D1	Po-210	1.994E-04	5.751E-23	2.891E-21	1.064E-19	1.076E-17	7.368E-16	5.539E-14	1.513E-12	1.597E-11
U-238+D1	ΣDSR(j)		1.272E-05	1.268E-05	1.260E-05	1.231E-05	1.152E-05	9.129E-06	4.701E-06	4.609E-07
U-238+D1	U-238+D1	2.633E-10	1.679E-11	1.674E-11	1.663E-11	1.624E-11	1.520E-11	1.205E-11	6.204E-12	6.076E-13
U-238+D1	U-234	2.633E-10	6.485E-18	1.940E-17	4.497E-17	1.318E-16	3.583E-16	9.357E-16	1.440E-15	4.692E-16
U-238+D1	Th-230	2.633E-10	8.740E-23	6.101E-22	3.209E-21	2.826E-20	2.280E-19	2.126E-18	1.251E-17	3.988E-17
U-238+D1	Ra-226+D2	2.633E-10	3.764E-25	5.640E-24	6.554E-23	1.710E-21	3.991E-20	1.212E-18	2.051E-17	1.767E-16
U-238+D1	Pb-210+D1	2.633E-10	2.124E-28	6.591E-27	1.642E-25	1.215E-23	7.350E-22	5.271E-20	1.421E-18	1.494E-17
U-238+D1	ΣDSR(j)		1.679E-11	1.674E-11	1.663E-11	1.624E-11	1.520E-11	1.205E-11	6.205E-12	6.083E-13
U-238+D1	U-238+D1	3.789E-12	2.417E-13	2.409E-13	2.393E-13	2.338E-13	2.188E-13	1.734E-13	8.930E-14	8.746E-15
U-238+D1	U-234	3.789E-12	9.335E-20	2.792E-19	6.473E-19	1.897E-18	5.157E-18	1.347E-17	2.073E-17	6.753E-18
U-238+D1	Th-230	3.789E-12	1.258E-24	8.781E-24	4.619E-23	4.068E-22	3.282E-21	3.060E-20	1.801E-19	5.741E-19
U-238+D1	Ra-226+D2	3.789E-12	5.418E-27	8.119E-26	9.434E-25	2.462E-23	5.745E-22	1.745E-20	2.953E-19	2.544E-18
U-238+D1	Pb-210+D2	3.789E-12	5.179E-30	1.602E-28	3.982E-27	2.944E-25	1.781E-23	1.277E-21	3.442E-20	3.617E-19
U-238+D1	ΣDSR(j)		2.417E-13	2.409E-13	2.393E-13	2.338E-13	2.188E-13	1.735E-13	8.932E-14	8.756E-15
U-238+D1	U-238+D1	4.189E-08	2.672E-09	2.663E-09	2.646E-09	2.585E-09	2.419E-09	1.917E-09	9.872E-10	9.669E-11
U-238+D1	U-234	4.189E-08	1.032E-15	3.087E-15	7.155E-15	2.097E-14	5.701E-14	1.489E-13	2.292E-13	7.466E-14
U-238+D1	Th-230	4.189E-08	1.391E-20	9.707E-20	5.107E-19	4.498E-18	3.629E-17	3.382E-16	1.991E-15	6.346E-15
U-238+D1	Ra-226+D3	4.189E-08	1.633E-22	2.446E-21	2.841E-20	7.412E-19	1.730E-17	5.252E-16	8.890E-15	7.659E-14
U-238+D1	Pb-210+D	4.189E-08	3.550E-26	1.069E-24	2.618E-23	1.917E-21	1.156E-19	8.277E-18	2.230E-16	2.344E-15
U-238+D1	Po-210	4.189E-08	1.208E-26	6.073E-25	2.235E-23	2.260E-21	1.548E-19	1.163E-17	3.178E-16	3.354E-15
U-238+D1	ΣDSR(j)		2.672E-09	2.663E-09	2.646E-09	2.585E-09	2.419E-09	1.918E-09	9.874E-10	9.685E-11
U-238+D1	U-238+D1	5.530E-14	3.527E-15	3.515E-15	3.492E-15	3.412E-15	3.193E-15	2.531E-15	1.303E-15	1.276E-16
U-238+D1	U-234	5.530E-14	1.362E-21	4.074E-21	9.445E-21	2.769E-20	7.525E-20	1.965E-19	3.025E-19	9.855E-20
U-238+D1	Th-230	5.530E-14	1.836E-26	1.281E-25	6.741E-25	5.937E-24	4.790E-23	4.465E-22	2.628E-21	8.377E-21
U-238+D1	Ra-226+D3	5.530E-14	2.156E-28	3.228E-27	3.750E-26	9.784E-25	2.283E-23	6.933E-22	1.173E-20	1.011E-19
U-238+D1	Pb-210+D1	5.530E-14	4.461E-32	1.385E-30	3.448E-29	2.551E-27	1.544E-25	1.107E-23	2.985E-22	3.137E-21
U-238+D1	ΣDSR(j)		3.527E-15	3.515E-15	3.492E-15	3.412E-15	3.193E-15	2.531E-15	1.303E-15	1.278E-16
U-238+D1	U-238+D1	7.959E-16	5.077E-17	5.060E-17	5.027E-17	4.911E-17	4.596E-17	3.643E-17	1.876E-17	1.837E-18
U-238+D1	U-234	7.959E-16	1.961E-23	5.865E-23	1.360E-22	3.985E-22	1.083E-21	2.829E-21	4.354E-21	1.418E-21
U-238+D1	Th-230	7.959E-16	2.642E-28	1.844E-27	9.703E-27	8.545E-26	6.894E-25	6.427E-24	3.782E-23	1.206E-22
U-238+D1	Ra-226+D3	7.959E-16	3.103E-30	4.647E-29	5.398E-28	1.408E-26	3.286E-25	9.979E-24	1.689E-22	1.455E-21
U-238+D1	Pb-210+D2	7.959E-16	1.088E-33	3.365E-32	8.365E-31	6.183E-29	3.740E-27	2.682E-25	7.229E-24	7.598E-23
U-238+D1	ΣDSR(j)		5.077E-17	5.060E-17	5.027E-17	4.911E-17	4.596E-17	3.643E-17	1.876E-17	1.840E-18

Summary : Residential (Rural)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.997E-07	1.274E-08	1.269E-08	1.261E-08	1.232E-08	1.153E-08	9.139E-09	4.706E-09	4.609E-10
U-238+D1	U-234	1.997E-07	4.919E-15	1.471E-14	3.411E-14	9.998E-14	2.718E-13	7.097E-13	1.092E-12	3.559E-13
U-238+D1	Th-230	1.997E-07	6.629E-20	4.627E-19	2.434E-18	2.144E-17	1.730E-16	1.612E-15	9.489E-15	3.025E-14
U-238+D1	Ra-226+D4	1.997E-07	1.666E-23	2.538E-22	2.975E-21	7.799E-20	1.823E-18	5.539E-17	9.376E-16	8.079E-15
U-238+D1	Pb-210+D	1.997E-07	1.692E-25	5.097E-24	1.248E-22	9.136E-21	5.508E-19	3.945E-17	1.063E-15	1.117E-14
U-238+D1	Po-210	1.997E-07	5.757E-26	2.895E-24	1.065E-22	1.077E-20	7.377E-19	5.546E-17	1.515E-15	1.599E-14
U-238+D1	ΣDSR(j)		1.274E-08	1.269E-08	1.261E-08	1.232E-08	1.153E-08	9.140E-09	4.707E-09	4.613E-10
U-238+D1	U-238+D1	2.636E-13	1.681E-14	1.676E-14	1.665E-14	1.626E-14	1.522E-14	1.206E-14	6.211E-15	6.084E-16
U-238+D1	U-234	2.636E-13	6.493E-21	1.942E-20	4.502E-20	1.320E-19	3.587E-19	9.368E-19	1.442E-18	4.697E-19
U-238+D1	Th-230	2.636E-13	8.751E-26	6.108E-25	3.213E-24	2.830E-23	2.283E-22	2.128E-21	1.253E-20	3.993E-20
U-238+D1	Ra-226+D4	2.636E-13	2.199E-29	3.351E-28	3.926E-27	1.029E-25	2.406E-24	7.311E-23	1.238E-21	1.066E-20
U-238+D1	Pb-210+D1	2.636E-13	2.126E-31	6.599E-30	1.644E-28	1.216E-26	7.359E-25	5.278E-23	1.423E-21	1.495E-20
U-238+D1	ΣDSR(j)		1.681E-14	1.676E-14	1.665E-14	1.626E-14	1.522E-14	1.206E-14	6.213E-15	6.089E-16
U-238+D1	U-238+D1	3.794E-15	2.420E-16	2.412E-16	2.396E-16	2.341E-16	2.191E-16	1.736E-16	8.941E-17	8.757E-18
U-238+D1	U-234	3.794E-15	9.346E-23	2.796E-22	6.480E-22	1.900E-21	5.163E-21	1.348E-20	2.075E-20	6.761E-21
U-238+D1	Th-230	3.794E-15	1.260E-27	8.792E-27	4.625E-26	4.073E-25	3.286E-24	3.063E-23	1.803E-22	5.748E-22
U-238+D1	Ra-226+D4	3.794E-15	3.165E-31	4.823E-30	5.652E-29	1.482E-27	3.464E-26	1.052E-24	1.781E-23	1.535E-22
U-238+D1	Pb-210+D2	3.794E-15	5.186E-33	1.604E-31	3.987E-30	2.947E-28	1.783E-26	1.278E-24	3.446E-23	3.622E-22
U-238+D1	ΣDSR(j)		2.420E-16	2.412E-16	2.396E-16	2.341E-16	2.191E-16	1.737E-16	8.943E-17	8.765E-18

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Nuclide									
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	2.455E+01	1.929E+01	1.970E+01	2.477E+01	4.782E+01	4.779E+02	3.434E+05	*7.632E+13	
Po-210	6.587E+01	4.171E+02	1.673E+04	6.844E+09	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15	
Ra-226	3.462E+00	3.454E+00	3.435E+00	3.386E+00	3.366E+00	3.850E+00	6.693E+00	4.775E+01	
Th-230	1.549E+02	1.520E+02	1.464E+02	1.295E+02	9.714E+01	5.319E+01	2.772E+01	1.802E+01	
U-234	6.873E+02	6.896E+02	6.941E+02	7.102E+02	7.580E+02	9.488E+02	1.719E+03	5.365E+03	
U-238	1.766E+02	1.772E+02	1.784E+02	1.826E+02	1.951E+02	2.461E+02	4.780E+02	4.876E+03	

*At specific activity limit

Summary : Residential (Rural)

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Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Pb-210	1.000E+00	1.506 ± 0.003	6.291E-01	1.907E+01	4.888E-01	2.455E+01
Po-210	1.000E+00	0.000E+00	1.822E-01	6.587E+01	1.822E-01	6.587E+01
Ra-226	1.000E+00	22.47 ± 0.04	3.573E+00	3.358E+00	3.466E+00	3.462E+00
Th-230	1.000E+00	1.000E+03	6.658E-01	1.802E+01	7.747E-02	1.549E+02
U-234	1.000E+00	0.000E+00	1.746E-02	6.873E+02	1.746E-02	6.873E+02
U-238	1.000E+00	0.000E+00	6.794E-02	1.766E+02	6.794E-02	1.766E+02

Summary : Residential (Rural)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	2.738E-01	2.650E-01	2.481E-01	1.971E-01	1.021E-01	1.022E-02	1.422E-05	1.430E-15
Pb-210	Pb-210	1.320E-06	3.667E-07	3.548E-07	3.322E-07	2.639E-07	1.367E-07	1.368E-08	1.904E-11	1.915E-21
Pb-210	Ra-226	9.996E-01	4.375E-03	1.277E-02	2.866E-02	7.603E-02	1.593E-01	2.073E-01	1.243E-01	1.742E-02
Pb-210	Ra-226	2.100E-04	9.190E-07	2.683E-06	6.020E-06	1.597E-05	3.346E-05	4.354E-05	2.610E-05	3.660E-06
Pb-210	Ra-226	1.998E-04	8.743E-07	2.552E-06	5.728E-06	1.519E-05	3.183E-05	4.143E-05	2.484E-05	3.482E-06
Pb-210	Ra-226	4.196E-08	1.836E-10	5.361E-10	1.203E-09	3.191E-09	6.686E-09	8.702E-09	5.217E-09	7.314E-10
Pb-210	Ra-226	2.000E-07	8.754E-10	2.556E-09	5.735E-09	1.521E-08	3.187E-08	4.148E-08	2.487E-08	3.486E-09
Pb-210	Th-230	9.996E-01	6.408E-07	4.369E-06	2.240E-05	1.842E-04	1.249E-03	7.292E-03	2.156E-02	3.779E-02
Pb-210	Th-230	2.100E-04	1.346E-10	9.177E-10	4.705E-09	3.869E-08	2.624E-07	1.532E-06	4.529E-06	7.937E-06
Pb-210	Th-230	1.998E-04	1.281E-10	8.731E-10	4.477E-09	3.681E-08	2.497E-07	1.457E-06	4.309E-06	7.552E-06
Pb-210	Th-230	4.196E-08	2.690E-14	1.834E-13	9.403E-13	7.731E-12	5.244E-11	3.061E-10	9.051E-10	1.586E-09
Pb-210	Th-230	2.000E-07	1.282E-13	8.742E-13	4.482E-12	3.685E-11	2.500E-10	1.459E-09	4.314E-09	7.561E-09
Pb-210	U-234	9.996E-01	1.488E-12	2.171E-11	2.461E-10	6.072E-09	1.237E-07	2.560E-06	2.259E-05	8.901E-05
Pb-210	U-234	2.100E-04	3.125E-16	4.560E-15	5.169E-14	1.275E-12	2.598E-11	5.378E-10	4.745E-09	1.870E-08
Pb-210	U-234	1.998E-04	2.973E-16	4.339E-15	4.918E-14	1.213E-12	2.471E-11	5.116E-10	4.515E-09	1.779E-08
Pb-210	U-234	4.196E-08	6.244E-20	9.113E-19	1.033E-17	2.549E-16	5.191E-15	1.075E-13	9.483E-13	3.736E-12
Pb-210	U-234	2.000E-07	2.976E-19	4.344E-18	4.923E-17	1.215E-15	2.474E-14	5.123E-13	4.520E-12	1.781E-11
Pb-210	U-238	1.599E-03	1.355E-21	4.082E-20	9.994E-19	7.318E-17	4.412E-15	3.160E-13	8.515E-12	8.949E-11
Pb-210	U-238	3.359E-07	2.847E-25	8.575E-24	2.099E-22	1.537E-20	9.267E-19	6.637E-17	1.789E-15	1.880E-14
Pb-210	U-238	3.196E-07	2.709E-25	8.158E-24	1.997E-22	1.462E-20	8.817E-19	6.315E-17	1.702E-15	1.788E-14
Pb-210	U-238	6.713E-11	5.635E-29	1.714E-27	4.195E-26	3.072E-24	1.852E-22	1.326E-20	3.574E-19	3.756E-18
Pb-210	U-238	3.200E-10	2.709E-28	8.168E-27	2.000E-25	1.464E-23	8.828E-22	6.322E-20	1.704E-18	1.791E-17
Pb-210	U-238	9.980E-01	8.458E-19	2.547E-17	6.236E-16	4.566E-14	2.753E-12	1.972E-10	5.313E-09	5.584E-08
Pb-210	U-238	2.096E-04	1.776E-22	5.351E-21	1.310E-19	9.591E-18	5.783E-16	4.142E-14	1.116E-12	1.173E-11
Pb-210	U-238	1.994E-04	1.690E-22	5.091E-21	1.246E-19	9.125E-18	5.502E-16	3.940E-14	1.062E-12	1.116E-11
Pb-210	U-238	4.189E-08	3.550E-26	1.069E-24	2.618E-23	1.917E-21	1.156E-19	8.277E-18	2.230E-16	2.344E-15
Pb-210	U-238	1.997E-07	1.692E-25	5.097E-24	1.248E-22	9.136E-21	5.508E-19	3.945E-17	1.063E-15	1.117E-14
Pb-210	ΣDOSE(j)		2.782E-01	2.778E-01	2.768E-01	2.733E-01	2.627E-01	2.249E-01	1.459E-01	5.532E-02
Po-210	Pb-210	1.000E+00	2.150E-01	3.573E-01	3.610E-01	2.873E-01	1.488E-01	1.489E-02	2.073E-05	2.085E-15
Po-210	Po-210	1.000E+00	1.822E-01	2.877E-02	7.171E-04	1.753E-09	1.624E-25	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	2.559E-03	1.218E-02	3.491E-02	1.041E-01	2.258E-01	2.970E-01	1.782E-01	2.498E-02
Po-210	Ra-226	2.100E-04	5.376E-07	2.558E-06	7.332E-06	2.186E-05	4.743E-05	6.238E-05	3.743E-05	5.247E-06
Po-210	Ra-226	1.998E-04	5.115E-07	2.434E-06	6.976E-06	2.080E-05	4.513E-05	5.935E-05	3.561E-05	4.992E-06
Po-210	Ra-226	4.196E-08	1.074E-10	5.113E-10	1.465E-09	4.369E-09	9.479E-09	1.247E-08	7.480E-09	1.049E-09
Po-210	Ra-226	2.000E-07	5.121E-10	2.437E-09	6.984E-09	2.083E-08	4.518E-08	5.942E-08	3.565E-08	4.998E-09
Po-210	Th-230	9.996E-01	3.013E-07	3.345E-06	2.376E-05	2.389E-04	1.735E-03	1.037E-02	3.083E-02	5.409E-02
Po-210	Th-230	2.100E-04	6.328E-11	7.025E-10	4.990E-09	5.018E-08	3.644E-07	2.178E-06	6.475E-06	1.136E-05
Po-210	Th-230	1.998E-04	6.021E-11	6.684E-10	4.748E-09	4.775E-08	3.467E-07	2.072E-06	6.161E-06	1.081E-05
Po-210	Th-230	4.196E-08	1.265E-14	1.404E-13	9.972E-13	1.003E-11	7.282E-11	4.352E-10	1.294E-09	2.270E-09
Po-210	Th-230	2.000E-07	6.028E-14	6.692E-13	4.753E-12	4.780E-11	3.471E-10	2.074E-09	6.168E-09	1.082E-08
Po-210	U-234	9.996E-01	5.867E-13	1.409E-11	2.324E-10	7.499E-09	1.686E-07	3.619E-06	3.224E-05	1.274E-04
Po-210	U-234	2.100E-04	1.232E-16	2.960E-15	4.882E-14	1.575E-12	3.541E-11	7.603E-10	6.773E-09	2.676E-08
Po-210	U-234	1.998E-04	1.173E-16	2.817E-15	4.645E-14	1.499E-12	3.369E-11	7.233E-10	6.444E-09	2.546E-08
Po-210	U-234	4.196E-08	2.463E-20	5.916E-19	9.756E-18	3.148E-16	7.077E-15	1.519E-13	1.353E-12	5.347E-12
Po-210	U-234	2.000E-07	1.174E-19	2.820E-18	4.650E-17	1.500E-15	3.373E-14	7.242E-13	6.451E-12	2.549E-11
Po-210	U-238	1.599E-03	4.611E-22	2.318E-20	8.533E-19	8.630E-17	5.909E-15	4.442E-13	1.213E-11	1.280E-10
Po-210	U-238	3.359E-07	9.686E-26	4.870E-24	1.792E-22	1.813E-20	1.241E-18	9.330E-17	2.548E-15	2.689E-14
Po-210	U-238	3.196E-07	9.216E-26	4.633E-24	1.705E-22	1.725E-20	1.181E-18	8.877E-17	2.424E-15	2.559E-14

Summary : Residential (Rural)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	1.934E-29	9.725E-28	3.582E-26	3.622E-24	2.480E-22	1.865E-20	5.092E-19	5.374E-18
Po-210	U-238	3.200E-10	9.221E-29	4.639E-27	1.707E-25	1.727E-23	1.182E-21	8.888E-20	2.427E-18	2.562E-17
Po-210	U-238	9.980E-01	2.878E-19	1.447E-17	5.324E-16	5.385E-14	3.687E-12	2.772E-10	7.570E-09	7.989E-08
Po-210	U-238	2.096E-04	6.044E-23	3.039E-21	1.118E-19	1.131E-17	7.744E-16	5.822E-14	1.590E-12	1.678E-11
Po-210	U-238	1.994E-04	5.751E-23	2.891E-21	1.064E-19	1.076E-17	7.368E-16	5.539E-14	1.513E-12	1.597E-11
Po-210	U-238	4.189E-08	1.208E-26	6.073E-25	2.235E-23	2.260E-21	1.548E-19	1.163E-17	3.178E-16	3.354E-15
Po-210	U-238	1.997E-07	5.757E-26	2.895E-24	1.065E-22	1.077E-20	7.377E-19	5.546E-17	1.515E-15	1.599E-14
Po-210	ΣDOSE(j)		3.997E-01	3.982E-01	3.966E-01	3.917E-01	3.765E-01	3.224E-01	2.092E-01	7.923E-02
Pb-210	Pb-210	1.900E-08	8.880E-09	8.593E-09	8.046E-09	6.392E-09	3.311E-09	3.313E-10	4.611E-13	4.637E-23
Pb-210	Ra-226	1.899E-08	1.408E-10	4.129E-10	9.283E-10	2.464E-09	5.164E-09	6.722E-09	4.030E-09	5.650E-10
Pb-210	Ra-226	3.989E-12	2.957E-14	8.673E-14	1.950E-13	5.176E-13	1.085E-12	1.412E-12	8.465E-13	1.187E-13
Pb-210	Ra-226	3.795E-12	2.813E-14	8.252E-14	1.855E-13	4.925E-13	1.032E-12	1.343E-12	8.053E-13	1.129E-13
Pb-210	Ra-226	7.972E-16	5.909E-18	1.733E-17	3.896E-17	1.034E-16	2.168E-16	2.822E-16	1.692E-16	2.372E-17
Pb-210	Ra-226	3.800E-15	2.817E-17	8.262E-17	1.857E-16	4.931E-16	1.033E-15	1.345E-15	8.063E-16	1.130E-16
Pb-210	Th-230	1.899E-08	2.004E-14	1.393E-13	7.209E-13	5.956E-12	4.047E-11	2.363E-10	6.990E-10	1.225E-09
Pb-210	Th-230	3.989E-12	4.209E-18	2.926E-17	1.514E-16	1.251E-15	8.500E-15	4.964E-14	1.468E-13	2.573E-13
Pb-210	Th-230	3.795E-12	4.004E-18	2.784E-17	1.441E-16	1.190E-15	8.087E-15	4.723E-14	1.397E-13	2.448E-13
Pb-210	Th-230	7.972E-16	8.411E-22	5.848E-21	3.026E-20	2.500E-19	1.699E-18	9.920E-18	2.934E-17	5.142E-17
Pb-210	Th-230	3.800E-15	4.009E-21	2.788E-20	1.442E-19	1.192E-18	8.097E-18	4.729E-17	1.399E-16	2.451E-16
Pb-210	U-234	1.899E-08	4.602E-20	6.875E-19	7.891E-18	1.961E-16	4.004E-15	8.297E-14	7.323E-13	2.885E-12
Pb-210	U-234	3.989E-12	9.667E-24	1.444E-22	1.657E-21	4.119E-20	8.410E-19	1.743E-17	1.538E-16	6.060E-16
Pb-210	U-234	3.795E-12	9.197E-24	1.374E-22	1.577E-21	3.919E-20	8.002E-19	1.658E-17	1.463E-16	5.766E-16
Pb-210	U-234	7.972E-16	1.932E-27	2.886E-26	3.312E-25	8.232E-24	1.681E-22	3.483E-21	3.074E-20	1.211E-19
Pb-210	U-234	3.800E-15	9.208E-27	1.376E-25	1.579E-24	3.924E-23	8.012E-22	1.660E-20	1.465E-19	5.773E-19
Pb-210	U-238	3.039E-11	4.151E-29	1.284E-27	3.194E-26	2.361E-24	1.428E-22	1.024E-20	2.760E-19	2.901E-18
Pb-210	U-238	6.383E-15	0.000E+00	0.000E+00	6.008E-30	4.955E-28	2.999E-26	2.151E-24	5.797E-23	6.093E-22
Pb-210	U-238	6.073E-15	0.000E+00	0.000E+00	5.716E-30	4.714E-28	2.853E-26	2.046E-24	5.515E-23	5.797E-22
Pb-210	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.357E-30	4.295E-28	1.158E-26	1.218E-25
Pb-210	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.855E-29	2.049E-27	5.522E-26	5.804E-25
Pb-210	U-238	1.896E-08	2.592E-26	8.016E-25	1.993E-23	1.473E-21	8.910E-20	6.389E-18	1.722E-16	1.810E-15
Pb-210	U-238	3.983E-12	4.913E-30	1.683E-28	4.186E-27	3.094E-25	1.871E-23	1.342E-21	3.617E-20	3.802E-19
Pb-210	U-238	3.789E-12	4.674E-30	1.601E-28	3.982E-27	2.944E-25	1.781E-23	1.277E-21	3.442E-20	3.617E-19
Pb-210	U-238	7.959E-16	0.000E+00	0.000E+00	0.000E+00	6.179E-29	3.740E-27	2.682E-25	7.229E-24	7.598E-23
Pb-210	U-238	3.794E-15	0.000E+00	0.000E+00	3.571E-30	2.945E-28	1.783E-26	1.278E-24	3.446E-23	3.622E-22
Pb-210	ΣDOSE(j)		9.021E-09	9.006E-09	8.975E-09	8.863E-09	8.518E-09	7.293E-09	4.732E-09	1.794E-09
Ra-226	Ra-226	9.996E-01	3.457E+00	3.447E+00	3.428E+00	3.361E+00	3.177E+00	2.611E+00	1.489E+00	2.087E-01
Ra-226	Ra-226	1.319E-06	4.563E-06	4.550E-06	4.524E-06	4.436E-06	4.194E-06	3.446E-06	1.966E-06	2.755E-07
Ra-226	Th-230	9.996E-01	7.485E-04	2.244E-03	5.222E-03	1.551E-02	4.382E-02	1.312E-01	3.038E-01	4.978E-01
Ra-226	Th-230	1.319E-06	9.880E-10	2.962E-09	6.893E-09	2.048E-08	5.785E-08	1.732E-07	4.010E-07	6.571E-07
Ra-226	Th-230	1.899E-08	1.422E-11	4.263E-11	9.921E-11	2.948E-10	8.327E-10	2.493E-09	5.772E-09	9.458E-09
Ra-226	U-234	9.996E-01	2.292E-09	1.602E-08	8.440E-08	7.445E-07	6.027E-06	5.684E-05	3.450E-04	1.186E-03
Ra-226	U-234	1.319E-06	3.025E-15	2.115E-14	1.114E-13	9.827E-13	7.956E-12	7.503E-11	4.554E-10	1.566E-09
Ra-226	U-234	1.899E-08	4.354E-17	3.045E-16	1.604E-15	1.414E-14	1.145E-13	1.080E-12	6.554E-12	2.254E-11
Ra-226	U-238	1.599E-03	2.586E-18	3.875E-17	4.502E-16	1.175E-14	2.742E-13	8.325E-12	1.409E-10	1.214E-09
Ra-226	U-238	2.111E-09	3.414E-24	5.115E-23	5.943E-22	1.551E-20	3.619E-19	1.099E-17	1.860E-16	1.602E-15
Ra-226	U-238	3.039E-11	4.913E-26	7.362E-25	8.554E-24	2.232E-22	5.209E-21	1.582E-19	2.677E-18	2.307E-17
Ra-226	U-238	9.980E-01	1.614E-15	2.418E-14	2.809E-13	7.331E-12	1.711E-10	5.195E-09	8.793E-08	7.575E-07

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	2.130E-21	3.192E-20	3.708E-19	9.677E-18	2.258E-16	6.857E-15	1.161E-13	9.999E-13
Ra-226	U-238	1.896E-08	3.066E-23	4.594E-22	5.338E-21	1.393E-19	3.251E-18	9.870E-17	1.671E-15	1.439E-14
Ra-226	ΣDOSE(j)		3.457E+00	3.449E+00	3.433E+00	3.376E+00	3.221E+00	2.742E+00	1.793E+00	7.077E-01
Pb-210	Ra-226	1.319E-06	5.857E-09	1.710E-08	3.838E-08	1.018E-07	2.133E-07	2.776E-07	1.664E-07	2.333E-08
Pb-210	Ra-226	2.771E-10	1.230E-12	3.592E-12	8.061E-12	2.138E-11	4.480E-11	5.831E-11	3.496E-11	4.901E-12
Pb-210	Ra-226	2.637E-10	1.170E-12	3.417E-12	7.670E-12	2.035E-11	4.262E-11	5.547E-11	3.326E-11	4.663E-12
Pb-210	Ra-226	5.538E-14	2.458E-16	7.178E-16	1.611E-15	4.273E-15	8.952E-15	1.165E-14	6.985E-15	9.793E-16
Pb-210	Ra-226	2.640E-13	1.172E-15	3.422E-15	7.679E-15	2.037E-14	4.267E-14	5.554E-14	3.330E-14	4.668E-15
Pb-210	Th-230	1.319E-06	8.238E-13	5.741E-12	2.974E-11	2.459E-10	1.671E-09	9.757E-09	2.886E-08	5.058E-08
Pb-210	Th-230	2.771E-10	1.730E-16	1.206E-15	6.247E-15	5.164E-14	3.509E-13	2.050E-12	6.062E-12	1.062E-11
Pb-210	Th-230	2.637E-10	1.646E-16	1.147E-15	5.943E-15	4.913E-14	3.339E-13	1.950E-12	5.767E-12	1.011E-11
Pb-210	Th-230	5.538E-14	3.458E-20	2.410E-19	1.248E-18	1.032E-17	7.013E-17	4.096E-16	1.211E-15	2.123E-15
Pb-210	Th-230	2.640E-13	1.648E-19	1.149E-18	5.950E-18	4.919E-17	3.343E-16	1.952E-15	5.774E-15	1.012E-14
Pb-210	U-234	1.319E-06	1.890E-18	2.831E-17	3.254E-16	8.094E-15	1.653E-13	3.426E-12	3.023E-11	1.191E-10
Pb-210	U-234	2.771E-10	3.969E-22	5.946E-21	6.835E-20	1.700E-18	3.472E-17	7.195E-16	6.350E-15	2.502E-14
Pb-210	U-234	2.637E-10	3.776E-22	5.657E-21	6.503E-20	1.617E-18	3.303E-17	6.846E-16	6.042E-15	2.381E-14
Pb-210	U-234	5.538E-14	7.931E-26	1.188E-24	1.366E-23	3.397E-22	6.938E-21	1.438E-19	1.269E-18	5.000E-18
Pb-210	U-234	2.640E-13	3.781E-25	5.664E-24	6.510E-23	1.619E-21	3.307E-20	6.854E-19	6.049E-18	2.383E-17
Pb-210	U-238	2.111E-09	1.703E-27	5.286E-26	1.316E-24	9.741E-23	5.894E-21	4.227E-19	1.139E-17	1.198E-16
Pb-210	U-238	4.434E-13	0.000E+00	1.083E-29	2.762E-28	2.046E-26	1.238E-24	8.879E-23	2.393E-21	2.516E-20
Pb-210	U-238	4.219E-13	0.000E+00	1.031E-29	2.628E-28	1.947E-26	1.178E-24	8.448E-23	2.277E-21	2.394E-20
Pb-210	U-238	8.862E-17	0.000E+00	0.000E+00	0.000E+00	3.266E-30	2.471E-28	1.774E-26	4.783E-25	5.028E-24
Pb-210	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	1.902E-29	1.179E-27	8.458E-26	2.280E-24	2.396E-23
Pb-210	U-238	1.317E-06	1.063E-24	3.298E-23	8.215E-22	6.078E-20	3.678E-18	2.638E-16	7.110E-15	7.474E-14
Pb-210	U-238	2.767E-10	2.230E-28	6.928E-27	1.725E-25	1.277E-23	7.725E-22	5.540E-20	1.494E-18	1.570E-17
Pb-210	U-238	2.633E-10	2.121E-28	6.591E-27	1.642E-25	1.215E-23	7.350E-22	5.271E-20	1.421E-18	1.494E-17
Pb-210	U-238	5.530E-14	0.000E+00	1.114E-30	3.365E-29	2.551E-27	1.544E-25	1.107E-23	2.985E-22	3.137E-21
Pb-210	U-238	2.636E-13	0.000E+00	6.440E-30	1.642E-28	1.216E-26	7.359E-25	5.278E-23	1.423E-21	1.495E-20
Pb-210	ΣDOSE(j)		5.860E-09	1.711E-08	3.842E-08	1.021E-07	2.150E-07	2.875E-07	1.954E-07	7.406E-08
Ra-226	Ra-226	1.899E-08	6.568E-08	6.549E-08	6.512E-08	6.386E-08	6.037E-08	4.960E-08	2.829E-08	3.966E-09
Ra-226	Ra-226	2.100E-04	1.833E-03	1.827E-03	1.817E-03	1.782E-03	1.685E-03	1.384E-03	7.895E-04	1.107E-04
Ra-226	ΣDOSE(j)		1.833E-03	1.828E-03	1.817E-03	1.782E-03	1.685E-03	1.384E-03	7.896E-04	1.107E-04
Ra-226	Ra-226	2.771E-10	2.419E-09	2.412E-09	2.399E-09	2.352E-09	2.224E-09	1.827E-09	1.042E-09	1.461E-10
Ra-226	Ra-226	3.989E-12	3.482E-11	3.472E-11	3.453E-11	3.386E-11	3.201E-11	2.630E-11	1.500E-11	2.103E-12
Ra-226	ΣDOSE(j)		2.454E-09	2.447E-09	2.433E-09	2.386E-09	2.256E-09	1.853E-09	1.057E-09	1.482E-10
Ra-226	Ra-226	1.998E-04	6.110E-04	6.092E-04	6.058E-04	5.940E-04	5.616E-04	4.614E-04	2.632E-04	3.689E-05
Ra-226	Ra-226	2.637E-10	8.065E-10	8.042E-10	7.997E-10	7.841E-10	7.413E-10	6.091E-10	3.474E-10	4.870E-11
Ra-226	Th-230	1.998E-04	1.323E-07	3.966E-07	9.229E-07	2.742E-06	7.746E-06	2.319E-05	5.369E-05	8.798E-05
Ra-226	Th-230	2.637E-10	1.746E-13	5.235E-13	1.218E-12	3.619E-12	1.022E-11	3.062E-11	7.087E-11	1.161E-10
Ra-226	Th-230	3.795E-12	2.513E-15	7.535E-15	1.754E-14	5.210E-14	1.472E-13	4.407E-13	1.020E-12	1.672E-12
Ra-226	U-234	1.998E-04	4.050E-13	2.832E-12	1.492E-11	1.316E-10	1.065E-09	1.005E-08	6.097E-08	2.097E-07
Ra-226	U-234	2.637E-10	5.345E-19	3.738E-18	1.969E-17	1.737E-16	1.406E-15	1.326E-14	8.048E-14	2.768E-13
Ra-226	U-234	3.795E-12	7.694E-21	5.381E-20	2.834E-19	2.500E-18	2.024E-17	1.909E-16	1.158E-15	3.984E-15
Ra-226	U-238	3.196E-07	4.569E-22	6.848E-21	7.957E-20	2.076E-18	4.846E-17	1.471E-15	2.491E-14	2.146E-13
Ra-226	U-238	4.219E-13	6.031E-28	9.039E-27	1.050E-25	2.741E-24	6.397E-23	1.942E-21	3.288E-20	2.832E-19

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	8.210E-30	1.301E-28	1.512E-27	3.945E-26	9.207E-25	2.796E-23	4.732E-22	4.077E-21
Ra-226	U-238	1.994E-04	2.851E-19	4.273E-18	4.965E-17	1.296E-15	3.024E-14	9.182E-13	1.554E-11	1.339E-10
Ra-226	U-238	2.633E-10	3.764E-25	5.640E-24	6.554E-23	1.710E-21	3.991E-20	1.212E-18	2.051E-17	1.767E-16
Ra-226	U-238	3.789E-12	5.417E-27	8.119E-26	9.434E-25	2.462E-23	5.745E-22	1.745E-20	2.953E-19	2.544E-18
Ra-226	ΣDOSE (j)		6.111E-04	6.096E-04	6.068E-04	5.968E-04	5.694E-04	4.846E-04	3.170E-04	1.251E-04
Ra-226	Ra-226	3.795E-12	1.161E-11	1.158E-11	1.151E-11	1.129E-11	1.067E-11	8.767E-12	5.001E-12	7.010E-13
Ra-226	Ra-226	4.196E-08	3.495E-07	3.485E-07	3.465E-07	3.398E-07	3.212E-07	2.639E-07	1.506E-07	2.110E-08
Ra-226	ΣDOSE (j)		3.495E-07	3.485E-07	3.465E-07	3.398E-07	3.213E-07	2.639E-07	1.506E-07	2.110E-08
Ra-226	Ra-226	5.538E-14	4.613E-13	4.600E-13	4.574E-13	4.485E-13	4.240E-13	3.484E-13	1.987E-13	2.786E-14
Ra-226	Ra-226	7.972E-16	6.640E-15	6.621E-15	6.584E-15	6.456E-15	6.104E-15	5.015E-15	2.861E-15	4.010E-16
Ra-226	ΣDOSE (j)		4.679E-13	4.666E-13	4.640E-13	4.550E-13	4.301E-13	3.534E-13	2.016E-13	2.826E-14
Ra-226	Ra-226	2.000E-07	3.686E-08	3.676E-08	3.655E-08	3.584E-08	3.389E-08	2.784E-08	1.588E-08	2.226E-09
Ra-226	Ra-226	2.640E-13	4.866E-14	4.852E-14	4.825E-14	4.731E-14	4.473E-14	3.675E-14	2.096E-14	2.939E-15
Ra-226	Th-230	2.000E-07	7.868E-12	2.380E-11	5.555E-11	1.653E-10	4.672E-10	1.399E-09	3.240E-09	5.309E-09
Ra-226	Th-230	2.640E-13	1.039E-17	3.141E-17	7.333E-17	2.182E-16	6.168E-16	1.847E-15	4.276E-15	7.007E-15
Ra-226	Th-230	3.800E-15	1.495E-19	4.521E-19	1.056E-18	3.141E-18	8.878E-18	2.659E-17	6.155E-17	1.009E-16
Ra-226	U-234	2.000E-07	2.385E-17	1.690E-16	8.957E-16	7.926E-15	6.424E-14	6.061E-13	3.679E-12	1.265E-11
Ra-226	U-234	2.640E-13	3.148E-23	2.231E-22	1.182E-21	1.046E-20	8.480E-20	8.000E-19	4.856E-18	1.670E-17
Ra-226	U-234	3.800E-15	4.531E-25	3.212E-24	1.702E-23	1.506E-22	1.221E-21	1.152E-20	6.990E-20	2.404E-19
Ra-226	U-238	3.200E-10	2.670E-26	4.068E-25	4.767E-24	1.250E-22	2.921E-21	8.876E-20	1.503E-18	1.295E-17
Ra-226	U-238	4.224E-16	0.000E+00	0.000E+00	5.851E-30	1.645E-28	3.856E-27	1.172E-25	1.983E-24	1.709E-23
Ra-226	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	2.209E-30	5.534E-29	1.686E-27	2.855E-26	2.460E-25
Ra-226	U-238	1.997E-07	1.666E-23	2.538E-22	2.975E-21	7.799E-20	1.823E-18	5.539E-17	9.376E-16	8.079E-15
Ra-226	U-238	2.636E-13	2.192E-29	3.351E-28	3.926E-27	1.029E-25	2.406E-24	7.311E-23	1.238E-21	1.066E-20
Ra-226	U-238	3.794E-15	0.000E+00	4.482E-30	5.635E-29	1.482E-27	3.464E-26	1.052E-24	1.781E-23	1.535E-22
Ra-226	ΣDOSE (j)		3.687E-08	3.678E-08	3.661E-08	3.601E-08	3.435E-08	2.924E-08	1.912E-08	7.548E-09
Ra-226	Ra-226	3.800E-15	7.004E-16	6.984E-16	6.945E-16	6.810E-16	6.438E-16	5.290E-16	3.017E-16	4.230E-17
Th-230	Th-230	9.996E-01	7.669E-02	7.669E-02	7.668E-02	7.668E-02	7.666E-02	7.659E-02	7.641E-02	7.577E-02
Th-230	Th-230	1.319E-06	1.012E-07	1.012E-07	1.012E-07	1.012E-07	1.012E-07	1.011E-07	1.009E-07	1.000E-07
Th-230	U-234	9.996E-01	3.526E-07	1.055E-06	2.454E-06	7.276E-06	2.045E-05	6.021E-05	1.338E-04	2.028E-04
Th-230	U-234	1.319E-06	4.654E-13	1.393E-12	3.239E-12	9.605E-12	2.699E-11	7.948E-11	1.766E-10	2.677E-10
Th-230	U-234	1.899E-08	6.699E-15	2.005E-14	4.663E-14	1.383E-13	3.886E-13	1.144E-12	2.542E-12	3.854E-12
Th-230	U-234	2.100E-04	7.405E-11	2.217E-10	5.155E-10	1.528E-09	4.295E-09	1.265E-08	2.810E-08	4.260E-08
Th-230	U-234	2.771E-10	9.775E-17	2.926E-16	6.804E-16	2.017E-15	5.670E-15	1.669E-14	3.709E-14	5.624E-14
Th-230	U-234	3.989E-12	1.407E-18	4.212E-18	9.794E-18	2.904E-17	8.161E-17	2.403E-16	5.338E-16	8.095E-16
Th-230	U-234	1.998E-04	7.046E-11	2.109E-10	4.904E-10	1.454E-09	4.087E-09	1.203E-08	2.673E-08	4.053E-08
Th-230	U-234	2.637E-10	9.300E-17	2.784E-16	6.474E-16	1.919E-15	5.395E-15	1.588E-14	3.529E-14	5.350E-14
Th-230	U-234	3.795E-12	1.339E-18	4.007E-18	9.318E-18	2.763E-17	7.765E-17	2.286E-16	5.079E-16	7.701E-16
Th-230	U-234	4.196E-08	1.480E-14	4.430E-14	1.030E-13	3.054E-13	8.584E-13	2.528E-12	5.615E-12	8.514E-12
Th-230	U-234	5.538E-14	1.953E-20	5.848E-20	1.360E-19	4.032E-19	1.133E-18	3.336E-18	7.412E-18	1.124E-17
Th-230	U-234	7.972E-16	2.812E-22	8.417E-22	1.957E-21	5.803E-21	1.631E-20	4.802E-20	1.067E-19	1.618E-19
Th-230	U-234	2.000E-07	7.054E-14	2.112E-13	4.910E-13	1.456E-12	4.092E-12	1.205E-11	2.676E-11	4.058E-11
Th-230	U-234	2.640E-13	9.311E-20	2.788E-19	6.481E-19	1.922E-18	5.401E-18	1.590E-17	3.533E-17	5.357E-17
Th-230	U-234	3.800E-15	1.340E-21	4.012E-21	9.329E-21	2.766E-20	7.774E-20	2.289E-19	5.085E-19	7.711E-19

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	5.310E-16	3.706E-15	1.950E-14	1.717E-13	1.385E-12	1.291E-11	7.600E-11	2.423E-10
Th-230	U-238	2.111E-09	7.009E-22	4.892E-21	2.574E-20	2.267E-19	1.829E-18	1.705E-17	1.003E-16	3.198E-16
Th-230	U-238	3.039E-11	1.009E-23	7.042E-23	3.704E-22	3.263E-21	2.632E-20	2.454E-19	1.444E-18	4.604E-18
Th-230	U-238	3.359E-07	1.115E-19	7.785E-19	4.095E-18	3.607E-17	2.910E-16	2.712E-15	1.596E-14	5.089E-14
Th-230	U-238	4.434E-13	1.472E-25	1.028E-24	5.406E-24	4.761E-23	3.841E-22	3.580E-21	2.107E-20	6.718E-20
Th-230	U-238	6.383E-15	2.119E-27	1.479E-26	7.781E-26	6.853E-25	5.529E-24	5.154E-23	3.033E-22	9.670E-22
Th-230	U-238	3.196E-07	1.061E-19	7.406E-19	3.896E-18	3.431E-17	2.768E-16	2.581E-15	1.519E-14	4.842E-14
Th-230	U-238	4.219E-13	1.401E-25	9.776E-25	5.143E-24	4.530E-23	3.654E-22	3.406E-21	2.005E-20	6.391E-20
Th-230	U-238	6.073E-15	2.016E-27	1.407E-26	7.403E-26	6.520E-25	5.260E-24	4.903E-23	2.886E-22	9.200E-22
Th-230	U-238	6.713E-11	2.229E-23	1.556E-22	8.184E-22	7.208E-21	5.815E-20	5.421E-19	3.190E-18	1.017E-17
Th-230	U-238	8.862E-17	2.864E-29	2.044E-28	1.080E-27	9.514E-27	7.676E-26	7.155E-25	4.211E-24	1.342E-23
Th-230	U-238	1.276E-18	0.000E+00	2.656E-30	1.516E-29	1.363E-28	1.105E-27	1.030E-26	6.062E-26	1.932E-25
Th-230	U-238	3.200E-10	1.062E-22	7.415E-22	3.901E-21	3.436E-20	2.772E-19	2.584E-18	1.521E-17	4.848E-17
Th-230	U-238	4.224E-16	1.396E-28	9.788E-28	5.149E-27	4.535E-26	3.659E-25	3.411E-24	2.007E-23	6.399E-23
Th-230	U-238	6.080E-18	1.812E-30	1.373E-29	7.378E-29	6.528E-28	5.266E-27	4.909E-26	2.889E-25	9.211E-25
Th-230	U-238	9.980E-01	3.313E-13	2.313E-12	1.217E-11	1.071E-10	8.644E-10	8.058E-09	4.743E-08	1.512E-07
Th-230	U-238	1.317E-06	4.374E-19	3.053E-18	1.606E-17	1.414E-16	1.141E-15	1.064E-14	6.260E-14	1.996E-13
Th-230	U-238	1.896E-08	6.295E-21	4.394E-20	2.312E-19	2.036E-18	1.642E-17	1.531E-16	9.011E-16	2.873E-15
Th-230	U-238	2.096E-04	6.959E-17	4.858E-16	2.555E-15	2.251E-14	1.816E-13	1.693E-12	9.962E-12	3.176E-11
Th-230	U-238	2.767E-10	9.186E-23	6.412E-22	3.373E-21	2.971E-20	2.397E-19	2.234E-18	1.315E-17	4.192E-17
Th-230	U-238	3.983E-12	1.322E-24	9.229E-24	4.855E-23	4.276E-22	3.450E-21	3.216E-20	1.893E-19	6.034E-19
Th-230	U-238	1.994E-04	6.621E-17	4.622E-16	2.431E-15	2.141E-14	1.728E-13	1.610E-12	9.478E-12	3.021E-11
Th-230	U-238	2.633E-10	8.740E-23	6.101E-22	3.209E-21	2.826E-20	2.280E-19	2.126E-18	1.251E-17	3.988E-17
Th-230	U-238	3.789E-12	1.258E-24	8.781E-24	4.619E-23	4.068E-22	3.282E-21	3.060E-20	1.801E-19	5.741E-19
Th-230	U-238	4.189E-08	1.391E-20	9.707E-20	5.107E-19	4.498E-18	3.629E-17	3.382E-16	1.991E-15	6.346E-15
Th-230	U-238	5.530E-14	1.836E-26	1.281E-25	6.741E-25	5.937E-24	4.790E-23	4.465E-22	2.628E-21	8.377E-21
Th-230	U-238	7.959E-16	2.642E-28	1.844E-27	9.703E-27	8.545E-26	6.894E-25	6.427E-24	3.782E-23	1.206E-22
Th-230	U-238	1.997E-07	6.629E-20	4.627E-19	2.434E-18	2.144E-17	1.730E-16	1.612E-15	9.489E-15	3.025E-14
Th-230	U-238	2.636E-13	8.751E-26	6.108E-25	3.213E-24	2.830E-23	2.283E-22	2.128E-21	1.253E-20	3.993E-20
Th-230	U-238	3.794E-15	1.260E-27	8.792E-27	4.625E-26	4.073E-25	3.286E-24	3.063E-23	1.803E-22	5.748E-22
Th-230	ΣDOSE(j)		7.669E-02	7.669E-02	7.669E-02	7.668E-02	7.668E-02	7.665E-02	7.655E-02	7.598E-02
Th-230	Th-230	1.899E-08	1.457E-09	1.457E-09	1.457E-09	1.457E-09	1.457E-09	1.455E-09	1.452E-09	1.440E-09
Th-230	Th-230	2.100E-04	1.611E-05	1.611E-05	1.611E-05	1.611E-05	1.610E-05	1.609E-05	1.605E-05	1.592E-05
Th-230	ΣDOSE(j)		1.611E-05	1.611E-05	1.611E-05	1.611E-05	1.610E-05	1.609E-05	1.605E-05	1.592E-05
Ra-226	Th-230	2.100E-04	3.970E-07	1.190E-06	2.769E-06	8.225E-06	2.324E-05	6.958E-05	1.611E-04	2.639E-04
Ra-226	Th-230	3.989E-12	7.543E-15	2.261E-14	5.261E-14	1.563E-13	4.415E-13	1.322E-12	3.060E-12	5.014E-12
Ra-226	U-234	2.100E-04	1.216E-12	8.499E-12	4.475E-11	3.947E-10	3.196E-09	3.014E-08	1.829E-07	6.290E-07
Ra-226	U-234	2.771E-10	1.605E-18	1.122E-17	5.907E-17	5.210E-16	4.218E-15	3.978E-14	2.414E-13	8.303E-13
Ra-226	U-234	3.989E-12	2.310E-20	1.615E-19	8.503E-19	7.500E-18	6.072E-17	5.726E-16	3.475E-15	1.195E-14
Ra-226	U-238	3.359E-07	1.372E-21	2.055E-20	2.388E-19	6.229E-18	1.454E-16	4.414E-15	7.471E-14	6.436E-13
Ra-226	U-238	4.434E-13	1.812E-27	2.713E-26	3.152E-25	8.223E-24	1.919E-22	5.826E-21	9.861E-20	8.496E-19
Ra-226	U-238	6.383E-15	2.558E-29	3.905E-28	4.536E-27	1.184E-25	2.762E-24	8.386E-23	1.419E-21	1.223E-20
Ra-226	U-238	2.096E-04	8.564E-19	1.283E-17	1.490E-16	3.887E-15	9.071E-14	2.754E-12	4.662E-11	4.016E-10
Ra-226	U-238	2.767E-10	1.130E-24	1.693E-23	1.967E-22	5.131E-21	1.197E-19	3.636E-18	6.154E-17	5.301E-16
Ra-226	U-238	3.983E-12	1.627E-26	2.437E-25	2.831E-24	7.385E-23	1.723E-21	5.233E-20	8.857E-19	7.631E-18
Ra-226	ΣDOSE(j)		3.970E-07	1.190E-06	2.769E-06	8.226E-06	2.324E-05	6.961E-05	1.612E-04	2.645E-04

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	2.126E-11	2.126E-11	2.126E-11	2.126E-11	2.125E-11	2.124E-11	2.119E-11	2.101E-11
Th-230	Th-230	3.989E-12	3.060E-13	3.060E-13	3.060E-13	3.060E-13	3.059E-13	3.057E-13	3.049E-13	3.024E-13
Th-230	ΣDOSE(j)		2.157E-11	2.157E-11	2.157E-11	2.157E-11	2.156E-11	2.154E-11	2.149E-11	2.131E-11
Ra-226	Th-230	2.771E-10	5.241E-13	1.571E-12	3.655E-12	1.086E-11	3.067E-11	9.184E-11	2.126E-10	3.484E-10
Th-230	Th-230	1.998E-04	1.532E-05	1.532E-05	1.532E-05	1.532E-05	1.532E-05	1.531E-05	1.527E-05	1.514E-05
Th-230	Th-230	2.637E-10	2.023E-11	2.023E-11	2.023E-11	2.023E-11	2.022E-11	2.020E-11	2.016E-11	1.999E-11
Th-230	ΣDOSE(j)		1.532E-05	1.532E-05	1.532E-05	1.532E-05	1.532E-05	1.531E-05	1.527E-05	1.514E-05
Th-230	Th-230	3.795E-12	2.912E-13	2.912E-13	2.912E-13	2.911E-13	2.911E-13	2.908E-13	2.901E-13	2.877E-13
Th-230	Th-230	4.196E-08	3.219E-09	3.219E-09	3.219E-09	3.219E-09	3.218E-09	3.215E-09	3.207E-09	3.181E-09
Th-230	ΣDOSE(j)		3.219E-09	3.219E-09	3.219E-09	3.219E-09	3.218E-09	3.215E-09	3.208E-09	3.181E-09
Ra-226	Th-230	4.196E-08	7.571E-11	2.269E-10	5.280E-10	1.569E-09	4.431E-09	1.327E-08	3.071E-08	5.033E-08
Ra-226	Th-230	7.972E-16	1.438E-18	4.311E-18	1.003E-17	2.980E-17	8.418E-17	2.521E-16	5.835E-16	9.562E-16
Ra-226	U-234	4.196E-08	2.319E-16	1.621E-15	8.534E-15	7.527E-14	6.094E-13	5.747E-12	3.488E-11	1.199E-10
Ra-226	U-234	5.538E-14	3.061E-22	2.139E-21	1.126E-20	9.936E-20	8.044E-19	7.586E-18	4.604E-17	1.583E-16
Ra-226	U-234	7.972E-16	4.405E-24	3.079E-23	1.621E-22	1.430E-21	1.158E-20	1.092E-19	6.627E-19	2.279E-18
Ra-226	U-238	6.713E-11	2.617E-25	3.919E-24	4.553E-23	1.188E-21	2.772E-20	8.417E-19	1.425E-17	1.227E-16
Ra-226	U-238	8.862E-17	0.000E+00	5.068E-30	5.886E-29	1.568E-27	3.659E-26	1.111E-24	1.880E-23	1.620E-22
Ra-226	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	2.210E-29	5.266E-28	1.599E-26	2.707E-25	2.332E-24
Ra-226	U-238	4.189E-08	1.633E-22	2.446E-21	2.841E-20	7.412E-19	1.730E-17	5.252E-16	8.890E-15	7.659E-14
Ra-226	U-238	5.530E-14	2.156E-28	3.228E-27	3.750E-26	9.784E-25	2.283E-23	6.933E-22	1.173E-20	1.011E-19
Ra-226	U-238	7.959E-16	3.041E-30	4.552E-29	5.397E-28	1.408E-26	3.286E-25	9.979E-24	1.689E-22	1.455E-21
Ra-226	ΣDOSE(j)		7.571E-11	2.269E-10	5.280E-10	1.569E-09	4.431E-09	1.327E-08	3.075E-08	5.045E-08
Th-230	Th-230	5.538E-14	4.249E-15	4.249E-15	4.249E-15	4.248E-15	4.247E-15	4.244E-15	4.234E-15	4.198E-15
Th-230	Th-230	7.972E-16	6.116E-17	6.116E-17	6.116E-17	6.115E-17	6.114E-17	6.109E-17	6.094E-17	6.043E-17
Th-230	ΣDOSE(j)		4.310E-15	4.310E-15	4.310E-15	4.310E-15	4.309E-15	4.305E-15	4.295E-15	4.259E-15
Ra-226	Th-230	5.538E-14	9.993E-17	2.995E-16	6.969E-16	2.070E-15	5.849E-15	1.751E-14	4.054E-14	6.643E-14
Th-230	Th-230	2.000E-07	1.534E-08	1.534E-08	1.534E-08	1.534E-08	1.534E-08	1.533E-08	1.529E-08	1.516E-08
Th-230	Th-230	2.640E-13	2.025E-14	2.025E-14	2.025E-14	2.025E-14	2.025E-14	2.023E-14	2.018E-14	2.001E-14
Th-230	ΣDOSE(j)		1.534E-08	1.534E-08	1.534E-08	1.534E-08	1.534E-08	1.533E-08	1.529E-08	1.516E-08
Th-230	Th-230	3.800E-15	2.915E-16	2.915E-16	2.915E-16	2.915E-16	2.914E-16	2.912E-16	2.905E-16	2.881E-16
U-234	U-234	9.996E-01	1.745E-02	1.739E-02	1.728E-02	1.688E-02	1.580E-02	1.252E-02	6.442E-03	6.297E-04
U-234	U-234	1.319E-06	2.304E-08	2.296E-08	2.281E-08	2.228E-08	2.085E-08	1.653E-08	8.504E-09	8.313E-10
U-234	U-238	1.599E-03	3.940E-11	1.178E-10	2.732E-10	8.008E-10	2.177E-09	5.685E-09	8.749E-09	2.850E-09
U-234	U-238	2.111E-09	5.201E-17	1.556E-16	3.606E-16	1.057E-15	2.873E-15	7.504E-15	1.155E-14	3.762E-15
U-234	U-238	3.039E-11	7.486E-19	2.239E-18	5.190E-18	1.521E-17	4.136E-17	1.080E-16	1.662E-16	5.415E-17
U-234	U-238	3.359E-07	8.275E-15	2.475E-14	5.738E-14	1.682E-13	4.572E-13	1.194E-12	1.838E-12	5.987E-13
U-234	U-238	4.434E-13	1.092E-20	3.267E-20	7.574E-20	2.220E-19	6.035E-19	1.576E-18	2.426E-18	7.903E-19
U-234	U-238	6.383E-15	1.572E-22	4.703E-22	1.090E-21	3.196E-21	8.686E-21	2.269E-20	3.492E-20	1.137E-20
U-234	U-238	3.196E-07	7.873E-15	2.355E-14	5.459E-14	1.600E-13	4.350E-13	1.136E-12	1.748E-12	5.696E-13
U-234	U-238	4.219E-13	1.039E-20	3.109E-20	7.206E-20	2.112E-19	5.742E-19	1.500E-18	2.308E-18	7.519E-19

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	1.496E-22	4.475E-22	1.037E-21	3.040E-21	8.264E-21	2.158E-20	3.322E-20	1.082E-20
U-234	U-238	6.713E-11	1.654E-18	4.947E-18	1.147E-17	3.361E-17	9.136E-17	2.386E-16	3.672E-16	1.196E-16
U-234	U-238	8.862E-17	2.183E-24	6.530E-24	1.514E-23	4.437E-23	1.206E-22	3.150E-22	4.848E-22	1.579E-22
U-234	U-238	1.276E-18	3.142E-26	9.399E-26	2.179E-25	6.386E-25	1.736E-24	4.534E-24	6.978E-24	2.273E-24
U-234	U-238	3.200E-10	7.883E-18	2.358E-17	5.466E-17	1.602E-16	4.355E-16	1.137E-15	1.751E-15	5.703E-16
U-234	U-238	4.224E-16	1.041E-23	3.112E-23	7.215E-23	2.115E-22	5.749E-22	1.501E-21	2.311E-21	7.528E-22
U-234	U-238	6.080E-18	1.498E-25	4.480E-25	1.039E-24	3.044E-24	8.274E-24	2.161E-23	3.326E-23	1.084E-23
U-234	U-238	9.980E-01	2.458E-08	7.354E-08	1.705E-07	4.997E-07	1.358E-06	3.547E-06	5.459E-06	1.779E-06
U-234	U-238	1.317E-06	3.245E-14	9.707E-14	2.250E-13	6.596E-13	1.793E-12	4.682E-12	7.206E-12	2.348E-12
U-234	U-238	1.896E-08	4.671E-16	1.397E-15	3.239E-15	9.494E-15	2.581E-14	6.740E-14	1.037E-13	3.379E-14
U-234	U-238	2.096E-04	5.164E-12	1.545E-11	3.581E-11	1.050E-10	2.853E-10	7.451E-10	1.147E-09	3.736E-10
U-234	U-238	2.767E-10	6.816E-18	2.039E-17	4.726E-17	1.385E-16	3.766E-16	9.835E-16	1.514E-15	4.931E-16
U-234	U-238	3.983E-12	9.811E-20	2.935E-19	6.803E-19	1.994E-18	5.420E-18	1.416E-17	2.179E-17	7.098E-18
U-234	U-238	1.994E-04	4.913E-12	1.470E-11	3.407E-11	9.985E-11	2.714E-10	7.089E-10	1.091E-09	3.554E-10
U-234	U-238	2.633E-10	6.485E-18	1.940E-17	4.497E-17	1.318E-16	3.583E-16	9.357E-16	1.440E-15	4.692E-16
U-234	U-238	3.789E-12	9.335E-20	2.792E-19	6.473E-19	1.897E-18	5.157E-18	1.347E-17	2.073E-17	6.753E-18
U-234	U-238	4.189E-08	1.032E-15	3.087E-15	7.155E-15	2.097E-14	5.701E-14	1.489E-13	2.292E-13	7.466E-14
U-234	U-238	5.530E-14	1.362E-21	4.074E-21	9.445E-21	2.769E-20	7.525E-20	1.965E-19	3.025E-19	9.855E-20
U-234	U-238	7.959E-16	1.961E-23	5.865E-23	1.360E-22	3.985E-22	1.083E-21	2.829E-21	4.354E-21	1.418E-21
U-234	U-238	1.997E-07	4.919E-15	1.471E-14	3.411E-14	9.998E-14	2.718E-13	7.097E-13	1.092E-12	3.559E-13
U-234	U-238	2.636E-13	6.493E-21	1.942E-20	4.502E-20	1.320E-19	3.587E-19	9.368E-19	1.442E-18	4.697E-19
U-234	U-238	3.794E-15	9.346E-23	2.796E-22	6.480E-22	1.900E-21	5.163E-21	1.348E-20	2.075E-20	6.761E-21
U-234	ΣDOSE(j)		1.745E-02	1.739E-02	1.728E-02	1.688E-02	1.580E-02	1.252E-02	6.448E-03	6.315E-04
U-234	U-234	1.899E-08	3.316E-10	3.305E-10	3.283E-10	3.208E-10	3.001E-10	2.379E-10	1.224E-10	1.197E-11
U-234	U-234	2.100E-04	3.666E-06	3.654E-06	3.629E-06	3.546E-06	3.318E-06	2.630E-06	1.353E-06	1.323E-07
U-234	ΣDOSE(j)		3.666E-06	3.654E-06	3.630E-06	3.546E-06	3.318E-06	2.630E-06	1.353E-06	1.323E-07
U-234	U-234	2.771E-10	4.839E-12	4.823E-12	4.791E-12	4.681E-12	4.380E-12	3.471E-12	1.786E-12	1.746E-13
U-234	U-234	3.989E-12	6.965E-14	6.942E-14	6.896E-14	6.737E-14	6.304E-14	4.996E-14	2.571E-14	2.513E-15
U-234	ΣDOSE(j)		4.908E-12	4.892E-12	4.860E-12	4.748E-12	4.443E-12	3.521E-12	1.812E-12	1.771E-13
U-234	U-234	1.998E-04	3.488E-06	3.476E-06	3.453E-06	3.374E-06	3.157E-06	2.502E-06	1.287E-06	1.258E-07
U-234	U-234	2.637E-10	4.604E-12	4.588E-12	4.558E-12	4.453E-12	4.167E-12	3.302E-12	1.699E-12	1.661E-13
U-234	ΣDOSE(j)		3.488E-06	3.476E-06	3.453E-06	3.374E-06	3.157E-06	2.502E-06	1.287E-06	1.258E-07
U-234	U-234	3.795E-12	6.627E-14	6.605E-14	6.561E-14	6.410E-14	5.998E-14	4.754E-14	2.446E-14	2.391E-15
U-234	U-234	4.196E-08	7.326E-10	7.301E-10	7.253E-10	7.086E-10	6.631E-10	5.255E-10	2.704E-10	2.643E-11
U-234	ΣDOSE(j)		7.326E-10	7.302E-10	7.254E-10	7.087E-10	6.631E-10	5.255E-10	2.704E-10	2.644E-11
U-234	U-234	5.538E-14	9.670E-16	9.638E-16	9.574E-16	9.354E-16	8.753E-16	6.937E-16	3.569E-16	3.489E-17
U-234	U-234	7.972E-16	1.392E-17	1.387E-17	1.378E-17	1.346E-17	1.260E-17	9.985E-18	5.138E-18	5.022E-19
U-234	ΣDOSE(j)		9.809E-16	9.776E-16	9.712E-16	9.489E-16	8.879E-16	7.036E-16	3.621E-16	3.539E-17
U-234	U-234	2.000E-07	3.492E-09	3.480E-09	3.457E-09	3.378E-09	3.161E-09	2.505E-09	1.289E-09	1.260E-10
U-234	U-234	2.640E-13	4.609E-15	4.594E-15	4.564E-15	4.459E-15	4.172E-15	3.306E-15	1.701E-15	1.663E-16
U-234	ΣDOSE(j)		3.492E-09	3.480E-09	3.457E-09	3.378E-09	3.161E-09	2.505E-09	1.289E-09	1.260E-10
U-234	U-234	3.800E-15	6.635E-17	6.613E-17	6.569E-17	6.418E-17	6.005E-17	4.759E-17	2.449E-17	2.394E-18

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	8.539E-09	8.511E-09	8.455E-09	8.260E-09	7.730E-09	6.127E-09	3.155E-09	3.090E-10
U-238	U-238	1.599E-03	4.255E-03	4.241E-03	4.213E-03	4.116E-03	3.852E-03	3.053E-03	1.572E-03	1.540E-04
U-238	ΣDOSE(j)		4.255E-03	4.241E-03	4.213E-03	4.116E-03	3.852E-03	3.053E-03	1.572E-03	1.540E-04
U-238	U-238	2.111E-09	5.617E-09	5.598E-09	5.561E-09	5.434E-09	5.085E-09	4.030E-09	2.075E-09	2.032E-10
U-238	U-238	3.039E-11	8.085E-11	8.058E-11	8.005E-11	7.821E-11	7.319E-11	5.801E-11	2.987E-11	2.926E-12
U-238	ΣDOSE(j)		5.698E-09	5.679E-09	5.641E-09	5.512E-09	5.158E-09	4.089E-09	2.105E-09	2.062E-10
U-238	U-238	3.359E-07	8.938E-07	8.908E-07	8.849E-07	8.646E-07	8.091E-07	6.413E-07	3.302E-07	3.234E-08
U-238	U-238	4.434E-13	1.180E-12	1.176E-12	1.168E-12	1.141E-12	1.068E-12	8.466E-13	4.359E-13	4.269E-14
U-238	ΣDOSE(j)		8.938E-07	8.908E-07	8.849E-07	8.646E-07	8.091E-07	6.413E-07	3.302E-07	3.234E-08
U-238	U-238	6.383E-15	1.698E-14	1.693E-14	1.681E-14	1.643E-14	1.537E-14	1.219E-14	6.274E-15	6.145E-16
U-238	U-238	3.196E-07	8.504E-07	8.476E-07	8.420E-07	8.226E-07	7.698E-07	6.102E-07	3.142E-07	3.077E-08
U-238	ΣDOSE(j)		8.504E-07	8.476E-07	8.420E-07	8.226E-07	7.698E-07	6.102E-07	3.142E-07	3.077E-08
U-238	U-238	4.219E-13	1.123E-12	1.119E-12	1.111E-12	1.086E-12	1.016E-12	8.055E-13	4.147E-13	4.062E-14
U-238	U-238	6.073E-15	1.616E-14	1.610E-14	1.600E-14	1.563E-14	1.463E-14	1.159E-14	5.969E-15	5.846E-16
U-238	ΣDOSE(j)		1.139E-12	1.135E-12	1.127E-12	1.101E-12	1.031E-12	8.170E-13	4.207E-13	4.120E-14
U-238	U-238	6.713E-11	1.786E-10	1.780E-10	1.768E-10	1.728E-10	1.617E-10	1.282E-10	6.599E-11	6.463E-12
U-238	U-238	8.862E-17	2.358E-16	2.350E-16	2.334E-16	2.281E-16	2.134E-16	1.692E-16	8.711E-17	8.531E-18
U-238	ΣDOSE(j)		1.786E-10	1.780E-10	1.768E-10	1.728E-10	1.617E-10	1.282E-10	6.599E-11	6.463E-12
U-238	U-238	1.276E-18	3.394E-18	3.382E-18	3.360E-18	3.283E-18	3.072E-18	2.435E-18	1.254E-18	1.228E-19
U-238	U-238	3.200E-10	8.514E-10	8.486E-10	8.430E-10	8.236E-10	7.707E-10	6.109E-10	3.146E-10	3.081E-11
U-238	ΣDOSE(j)		8.514E-10	8.486E-10	8.430E-10	8.236E-10	7.707E-10	6.109E-10	3.146E-10	3.081E-11
U-238	U-238	4.224E-16	1.124E-15	1.120E-15	1.113E-15	1.087E-15	1.017E-15	8.064E-16	4.152E-16	4.067E-17
U-238	U-238	6.080E-18	1.618E-17	1.612E-17	1.602E-17	1.565E-17	1.464E-17	1.161E-17	5.977E-18	5.853E-19
U-238	ΣDOSE(j)		1.140E-15	1.136E-15	1.129E-15	1.103E-15	1.032E-15	8.180E-16	4.212E-16	4.125E-17
U-238	U-238	9.980E-01	6.366E-02	6.345E-02	6.303E-02	6.158E-02	5.763E-02	4.568E-02	2.352E-02	2.303E-03
U-238	U-238	1.317E-06	8.403E-08	8.375E-08	8.320E-08	8.129E-08	7.607E-08	6.030E-08	3.104E-08	3.041E-09
U-238	ΣDOSE(j)		6.366E-02	6.345E-02	6.303E-02	6.158E-02	5.763E-02	4.568E-02	2.352E-02	2.303E-03
U-238	U-238	1.896E-08	1.210E-09	1.206E-09	1.198E-09	1.170E-09	1.095E-09	8.679E-10	4.469E-10	4.377E-11
U-238	U-238	2.096E-04	1.337E-05	1.333E-05	1.324E-05	1.293E-05	1.210E-05	9.594E-06	4.940E-06	4.838E-07
U-238	ΣDOSE(j)		1.337E-05	1.333E-05	1.324E-05	1.294E-05	1.210E-05	9.595E-06	4.940E-06	4.839E-07
U-238	U-238	2.767E-10	1.765E-11	1.759E-11	1.748E-11	1.707E-11	1.598E-11	1.266E-11	6.521E-12	6.387E-13
U-238	U-238	3.983E-12	2.541E-13	2.532E-13	2.515E-13	2.458E-13	2.300E-13	1.823E-13	9.386E-14	9.193E-15
U-238	ΣDOSE(j)		1.790E-11	1.784E-11	1.773E-11	1.732E-11	1.621E-11	1.285E-11	6.615E-12	6.478E-13
U-238	U-238	1.994E-04	1.272E-05	1.268E-05	1.260E-05	1.231E-05	1.152E-05	9.128E-06	4.700E-06	4.603E-07
U-238	U-238	2.633E-10	1.679E-11	1.674E-11	1.663E-11	1.624E-11	1.520E-11	1.205E-11	6.204E-12	6.076E-13
U-238	ΣDOSE(j)		1.272E-05	1.268E-05	1.260E-05	1.231E-05	1.152E-05	9.128E-06	4.700E-06	4.603E-07
U-238	U-238	3.789E-12	2.417E-13	2.409E-13	2.393E-13	2.338E-13	2.188E-13	1.734E-13	8.930E-14	8.746E-15

Summary : Residential (Rural)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	2.672E-09	2.663E-09	2.646E-09	2.585E-09	2.419E-09	1.917E-09	9.872E-10	9.669E-11
U-238	ΣDOSE(j)		2.672E-09	2.663E-09	2.646E-09	2.585E-09	2.419E-09	1.918E-09	9.873E-10	9.670E-11
U-238	U-238	5.530E-14	3.527E-15	3.515E-15	3.492E-15	3.412E-15	3.193E-15	2.531E-15	1.303E-15	1.276E-16
U-238	U-238	7.959E-16	5.077E-17	5.060E-17	5.027E-17	4.911E-17	4.596E-17	3.643E-17	1.876E-17	1.837E-18
U-238	ΣDOSE(j)		3.578E-15	3.566E-15	3.542E-15	3.461E-15	3.239E-15	2.567E-15	1.322E-15	1.295E-16
U-238	U-238	1.997E-07	1.274E-08	1.269E-08	1.261E-08	1.232E-08	1.153E-08	9.139E-09	4.706E-09	4.609E-10
U-238	U-238	2.636E-13	1.681E-14	1.676E-14	1.665E-14	1.626E-14	1.522E-14	1.206E-14	6.211E-15	6.084E-16
U-238	ΣDOSE(j)		1.274E-08	1.269E-08	1.261E-08	1.232E-08	1.153E-08	9.139E-09	4.706E-09	4.609E-10
U-238	U-238	3.794E-15	2.420E-16	2.412E-16	2.396E-16	2.341E-16	2.191E-16	1.736E-16	8.941E-17	8.757E-18

THF(i) is the thread fraction of the parent nuclide.

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	1.000E+00	9.676E-01	9.061E-01	7.197E-01	3.728E-01	3.731E-02	5.192E-05	5.222E-15
Pb-210	Pb-210	1.320E-06	1.320E-06	1.277E-06	1.196E-06	9.501E-07	4.922E-07	4.924E-08	6.854E-11	6.893E-21
Pb-210	Ra-226	9.996E-01	0.000E+00	3.066E-02	8.878E-02	2.621E-01	5.669E-01	7.450E-01	4.470E-01	6.266E-02
Pb-210	Ra-226	2.100E-04	0.000E+00	6.440E-06	1.865E-05	5.505E-05	1.191E-04	1.565E-04	9.388E-05	1.316E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	6.127E-06	1.774E-05	5.237E-05	1.133E-04	1.489E-04	8.932E-05	1.252E-05
Pb-210	Ra-226	4.196E-08	0.000E+00	1.287E-09	3.727E-09	1.100E-08	2.380E-08	3.127E-08	1.876E-08	2.630E-09
Pb-210	Ra-226	2.000E-07	0.000E+00	6.134E-09	1.776E-08	5.244E-08	1.134E-07	1.491E-07	8.943E-08	1.254E-08
Pb-210	Th-230	9.996E-01	0.000E+00	6.681E-06	5.872E-05	6.018E-04	4.360E-03	2.602E-02	7.734E-02	1.357E-01
Pb-210	Th-230	2.100E-04	0.000E+00	1.403E-09	1.233E-08	1.264E-07	9.158E-07	5.466E-06	1.624E-05	2.850E-05
Pb-210	Th-230	1.998E-04	0.000E+00	1.335E-09	1.174E-08	1.203E-07	8.713E-07	5.200E-06	1.546E-05	2.712E-05
Pb-210	Th-230	4.196E-08	0.000E+00	2.804E-13	2.465E-12	2.526E-11	1.830E-10	1.092E-09	3.246E-09	5.696E-09
Pb-210	Th-230	2.000E-07	0.000E+00	1.337E-12	1.175E-11	1.204E-10	8.724E-10	5.206E-09	1.547E-08	2.715E-08
Pb-210	U-234	9.996E-01	0.000E+00	2.052E-11	5.434E-10	1.883E-08	4.240E-07	9.087E-06	8.090E-05	3.195E-04
Pb-210	U-234	2.100E-04	0.000E+00	4.310E-15	1.141E-13	3.955E-12	8.905E-11	1.909E-09	1.699E-08	6.712E-08
Pb-210	U-234	1.998E-04	0.000E+00	4.101E-15	1.086E-13	3.763E-12	8.473E-11	1.816E-09	1.617E-08	6.386E-08
Pb-210	U-234	4.196E-08	0.000E+00	8.614E-19	2.281E-17	7.903E-16	1.780E-14	3.814E-13	3.396E-12	1.341E-11
Pb-210	U-234	2.000E-07	0.000E+00	4.106E-18	1.087E-16	3.767E-15	8.483E-14	1.818E-12	1.619E-11	6.394E-11
Pb-210	U-238	1.599E-03	0.000E+00	2.320E-20	1.848E-18	2.153E-16	1.486E-14	1.116E-12	3.044E-11	3.212E-10
Pb-210	U-238	3.359E-07	0.000E+00	4.874E-24	3.882E-22	4.522E-20	3.121E-18	2.343E-16	6.394E-15	6.746E-14
Pb-210	U-238	3.196E-07	0.000E+00	4.637E-24	3.693E-22	4.302E-20	2.970E-18	2.229E-16	6.084E-15	6.419E-14
Pb-210	U-238	6.713E-11	0.000E+00	9.740E-28	7.758E-26	9.036E-24	6.238E-22	4.683E-20	1.278E-18	1.348E-17
Pb-210	U-238	3.200E-10	0.000E+00	4.643E-27	3.698E-25	4.307E-23	2.973E-21	2.232E-19	6.091E-18	6.426E-17
Pb-210	U-238	9.980E-01	0.000E+00	1.448E-17	1.153E-15	1.343E-13	9.273E-12	6.961E-10	1.900E-08	2.004E-07
Pb-210	U-238	2.096E-04	0.000E+00	3.041E-21	2.422E-19	2.822E-17	1.948E-15	1.462E-13	3.990E-12	4.210E-11
Pb-210	U-238	1.994E-04	0.000E+00	2.894E-21	2.305E-19	2.685E-17	1.853E-15	1.391E-13	3.796E-12	4.005E-11
Pb-210	U-238	4.189E-08	0.000E+00	6.078E-25	4.841E-23	5.639E-21	3.893E-19	2.922E-17	7.974E-16	8.413E-15
Pb-210	U-238	1.997E-07	0.000E+00	2.897E-24	2.308E-22	2.688E-20	1.855E-18	1.393E-16	3.801E-15	4.010E-14
Pb-210	ΣS(j):		1.000E+00	9.983E-01	9.949E-01	9.825E-01	9.444E-01	8.086E-01	5.246E-01	1.988E-01
Po-210	Pb-210	1.000E+00	0.000E+00	8.172E-01	9.104E-01	7.263E-01	3.763E-01	3.765E-02	5.240E-05	5.269E-15
Po-210	Po-210	1.000E+00	1.000E+00	1.579E-01	3.935E-03	9.623E-09	8.911E-25	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	0.000E+00	1.660E-02	7.271E-02	2.479E-01	5.564E-01	7.389E-01	4.437E-01	6.220E-02
Po-210	Ra-226	2.100E-04	0.000E+00	3.486E-06	1.527E-05	5.206E-05	1.169E-04	1.552E-04	9.319E-05	1.307E-05
Po-210	Ra-226	1.998E-04	0.000E+00	3.317E-06	1.453E-05	4.953E-05	1.112E-04	1.477E-04	8.867E-05	1.243E-05
Po-210	Ra-226	4.196E-08	0.000E+00	6.967E-10	3.052E-09	1.040E-08	2.336E-08	3.101E-08	1.862E-08	2.611E-09
Po-210	Ra-226	2.000E-07	0.000E+00	3.321E-09	1.455E-08	4.959E-08	1.113E-07	1.478E-07	8.877E-08	1.245E-08
Po-210	Th-230	9.996E-01	0.000E+00	2.726E-06	4.114E-05	5.383E-04	4.191E-03	2.562E-02	7.655E-02	1.345E-01
Po-210	Th-230	2.100E-04	0.000E+00	5.727E-10	8.641E-09	1.131E-07	8.803E-07	5.381E-06	1.608E-05	2.825E-05
Po-210	Th-230	1.998E-04	0.000E+00	5.448E-10	8.221E-09	1.076E-07	8.375E-07	5.120E-06	1.530E-05	2.687E-05
Po-210	Th-230	4.196E-08	0.000E+00	1.144E-13	1.727E-12	2.260E-11	1.759E-10	1.075E-09	3.213E-09	5.645E-09
Po-210	Th-230	2.000E-07	0.000E+00	5.455E-13	8.231E-12	1.077E-10	8.386E-10	5.126E-09	1.532E-08	2.691E-08
Po-210	U-234	9.996E-01	0.000E+00	6.770E-12	3.343E-10	1.601E-08	4.001E-07	8.895E-06	7.995E-05	3.166E-04
Po-210	U-234	2.100E-04	0.000E+00	1.422E-15	7.021E-14	3.363E-12	8.403E-11	1.868E-09	1.679E-08	6.650E-08
Po-210	U-234	1.998E-04	0.000E+00	1.353E-15	6.680E-14	3.199E-12	7.995E-11	1.778E-09	1.598E-08	6.327E-08
Po-210	U-234	4.196E-08	0.000E+00	2.842E-19	1.403E-17	6.720E-16	1.679E-14	3.734E-13	3.356E-12	1.329E-11
Po-210	U-234	2.000E-07	0.000E+00	1.355E-18	6.688E-17	3.203E-15	8.005E-14	1.780E-12	1.600E-11	6.335E-11
Po-210	U-238	1.599E-03	0.000E+00	6.444E-21	1.016E-18	1.745E-16	1.378E-14	1.086E-12	3.003E-11	3.181E-10
Po-210	U-238	3.359E-07	0.000E+00	1.353E-24	2.133E-22	3.666E-20	2.893E-18	2.281E-16	6.308E-15	6.682E-14
Po-210	U-238	3.196E-07	0.000E+00	1.288E-24	2.030E-22	3.487E-20	2.753E-18	2.170E-16	6.002E-15	6.358E-14

Summary : Residential (Rural)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	0.000E+00	2.705E-28	4.263E-26	7.325E-24	5.782E-22	4.558E-20	1.261E-18	1.335E-17
Po-210	U-238	3.200E-10	0.000E+00	1.289E-27	2.032E-25	3.492E-23	2.756E-21	2.173E-19	6.009E-18	6.366E-17
Po-210	U-238	9.980E-01	0.000E+00	4.021E-18	6.337E-16	1.089E-13	8.596E-12	6.776E-10	1.874E-08	1.985E-07
Po-210	U-238	2.096E-04	0.000E+00	8.445E-22	1.331E-19	2.287E-17	1.806E-15	1.423E-13	3.936E-12	4.170E-11
Po-210	U-238	1.994E-04	0.000E+00	8.035E-22	1.266E-19	2.176E-17	1.718E-15	1.354E-13	3.745E-12	3.967E-11
Po-210	U-238	4.189E-08	0.000E+00	1.688E-25	2.660E-23	4.571E-21	3.608E-19	2.844E-17	7.866E-16	8.333E-15
Po-210	U-238	1.997E-07	0.000E+00	8.045E-25	1.268E-22	2.179E-20	1.720E-18	1.356E-16	3.750E-15	3.972E-14
Po-210	ΣS(j):		1.000E+00	9.917E-01	9.871E-01	9.748E-01	9.371E-01	8.024E-01	5.206E-01	1.971E-01
Pb-210	Pb-210	1.900E-08	1.900E-08	1.839E-08	1.722E-08	1.368E-08	7.084E-09	7.088E-10	9.865E-13	9.921E-23
Pb-210	Ra-226	1.899E-08	0.000E+00	5.825E-10	1.687E-09	4.979E-09	1.077E-08	1.415E-08	8.492E-09	1.191E-09
Pb-210	Ra-226	3.989E-12	0.000E+00	1.224E-13	3.543E-13	1.046E-12	2.263E-12	2.973E-12	1.784E-12	2.501E-13
Pb-210	Ra-226	3.795E-12	0.000E+00	1.164E-13	3.371E-13	9.951E-13	2.153E-12	2.829E-12	1.697E-12	2.379E-13
Pb-210	Ra-226	7.972E-16	0.000E+00	2.445E-17	7.080E-17	2.090E-16	4.521E-16	5.941E-16	3.565E-16	4.997E-17
Pb-210	Ra-226	3.800E-15	0.000E+00	1.166E-16	3.375E-16	9.963E-16	2.155E-15	2.832E-15	1.699E-15	2.382E-16
Pb-210	Th-230	1.899E-08	0.000E+00	1.269E-13	1.116E-12	1.143E-11	8.284E-11	4.944E-10	1.469E-09	2.578E-09
Pb-210	Th-230	3.989E-12	0.000E+00	2.666E-17	2.344E-16	2.402E-15	1.740E-14	1.038E-13	3.087E-13	5.415E-13
Pb-210	Th-230	3.795E-12	0.000E+00	2.537E-17	2.230E-16	2.285E-15	1.656E-14	9.880E-14	2.937E-13	5.152E-13
Pb-210	Th-230	7.972E-16	0.000E+00	5.328E-21	4.683E-20	4.800E-19	3.477E-18	2.075E-17	6.168E-17	1.082E-16
Pb-210	Th-230	3.800E-15	0.000E+00	2.540E-20	2.232E-19	2.288E-18	1.658E-17	9.892E-17	2.940E-16	5.158E-16
Pb-210	U-234	1.899E-08	0.000E+00	3.899E-19	1.033E-17	3.577E-16	8.056E-15	1.727E-13	1.537E-12	6.071E-12
Pb-210	U-234	3.989E-12	0.000E+00	8.189E-23	2.169E-21	7.514E-20	1.692E-18	3.627E-17	3.229E-16	1.275E-15
Pb-210	U-234	3.795E-12	0.000E+00	7.792E-23	2.063E-21	7.149E-20	1.610E-18	3.450E-17	3.072E-16	1.213E-15
Pb-210	U-234	7.972E-16	0.000E+00	1.637E-26	4.334E-25	1.502E-23	3.381E-22	7.247E-21	6.452E-20	2.548E-19
Pb-210	U-234	3.800E-15	0.000E+00	7.801E-26	2.066E-24	7.158E-23	1.612E-21	3.455E-20	3.076E-19	1.215E-18
Pb-210	U-238	3.039E-11	0.000E+00	4.409E-28	3.512E-26	4.090E-24	2.824E-22	2.120E-20	5.784E-19	6.103E-18
Pb-210	U-238	6.383E-15	0.000E+00	9.261E-32	7.376E-30	8.592E-28	5.931E-26	4.452E-24	1.215E-22	1.282E-21
Pb-210	U-238	6.073E-15	0.000E+00	8.811E-32	7.018E-30	8.174E-28	5.643E-26	4.236E-24	1.156E-22	1.220E-21
Pb-210	U-238	1.276E-18	0.000E+00	1.851E-35	1.474E-33	1.717E-31	1.185E-29	8.897E-28	2.428E-26	2.562E-25
Pb-210	U-238	6.080E-18	0.000E+00	8.821E-35	7.026E-33	8.184E-31	5.650E-29	4.241E-27	1.157E-25	1.221E-24
Pb-210	U-238	1.896E-08	0.000E+00	2.751E-25	2.191E-23	2.552E-21	1.762E-19	1.323E-17	3.609E-16	3.808E-15
Pb-210	U-238	3.983E-12	0.000E+00	5.779E-29	4.603E-27	5.361E-25	3.701E-23	2.778E-21	7.581E-20	7.999E-19
Pb-210	U-238	3.789E-12	0.000E+00	5.498E-29	4.379E-27	5.101E-25	3.521E-23	2.643E-21	7.213E-20	7.610E-19
Pb-210	U-238	7.959E-16	0.000E+00	1.155E-32	9.198E-31	1.071E-28	7.396E-27	5.552E-25	1.515E-23	1.598E-22
Pb-210	U-238	3.794E-15	0.000E+00	5.505E-32	4.384E-30	5.107E-28	3.525E-26	2.646E-24	7.222E-23	7.619E-22
Pb-210	ΣS(j):		1.900E-08	1.897E-08	1.890E-08	1.867E-08	1.794E-08	1.536E-08	9.968E-09	3.776E-09
Ra-226	Ra-226	9.996E-01	9.996E-01	9.968E-01	9.912E-01	9.719E-01	9.189E-01	7.550E-01	4.306E-01	6.037E-02
Ra-226	Ra-226	1.319E-06	1.319E-06	1.316E-06	1.308E-06	1.283E-06	1.213E-06	9.965E-07	5.684E-07	7.968E-08
Ra-226	Th-230	9.996E-01	0.000E+00	4.324E-04	1.294E-03	4.270E-03	1.246E-02	3.773E-02	8.763E-02	1.437E-01
Ra-226	Th-230	1.319E-06	0.000E+00	5.708E-10	1.708E-09	5.636E-09	1.644E-08	4.981E-08	1.157E-07	1.897E-07
Ra-226	Th-230	1.899E-08	0.000E+00	8.216E-12	2.458E-11	8.113E-11	2.367E-10	7.169E-10	1.665E-09	2.731E-09
Ra-226	U-234	9.996E-01	0.000E+00	1.987E-09	1.781E-08	1.951E-07	1.686E-06	1.627E-05	9.938E-05	3.425E-04
Ra-226	U-234	1.319E-06	0.000E+00	2.623E-15	2.351E-14	2.575E-13	2.225E-12	2.147E-11	1.312E-10	4.521E-10
Ra-226	U-234	1.899E-08	0.000E+00	3.775E-17	3.384E-16	3.706E-15	3.203E-14	3.091E-13	1.888E-12	6.508E-12
Ra-226	U-238	1.599E-03	0.000E+00	2.991E-18	8.038E-17	2.928E-15	7.542E-14	2.371E-12	4.053E-11	3.504E-10
Ra-226	U-238	2.111E-09	0.000E+00	3.948E-24	1.061E-22	3.865E-21	9.955E-20	3.130E-18	5.351E-17	4.625E-16
Ra-226	U-238	3.039E-11	0.000E+00	5.683E-26	1.527E-24	5.563E-23	1.433E-21	4.505E-20	7.701E-19	6.657E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.866E-15	5.015E-14	1.827E-12	4.706E-11	1.480E-09	2.529E-08	2.186E-07

Summary : Residential (Rural)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	0.000E+00	2.464E-21	6.620E-20	2.412E-18	6.212E-17	1.953E-15	3.339E-14	2.886E-13
Ra-226	U-238	1.896E-08	0.000E+00	3.546E-23	9.529E-22	3.471E-20	8.941E-19	2.811E-17	4.806E-16	4.154E-15
Ra-226	ΣS(j):		9.996E-01	9.972E-01	9.925E-01	9.762E-01	9.313E-01	7.927E-01	5.184E-01	2.044E-01
Pb-210	Ra-226	1.319E-06	0.000E+00	4.047E-08	1.172E-07	3.459E-07	7.484E-07	9.833E-07	5.900E-07	8.271E-08
Pb-210	Ra-226	2.771E-10	0.000E+00	8.501E-12	2.461E-11	7.266E-11	1.572E-10	2.065E-10	1.239E-10	1.737E-11
Pb-210	Ra-226	2.637E-10	0.000E+00	8.088E-12	2.342E-11	6.913E-11	1.496E-10	1.965E-10	1.179E-10	1.653E-11
Pb-210	Ra-226	5.538E-14	0.000E+00	1.699E-15	4.919E-15	1.452E-14	3.141E-14	4.128E-14	2.476E-14	3.472E-15
Pb-210	Ra-226	2.640E-13	0.000E+00	8.097E-15	2.345E-14	6.922E-14	1.497E-13	1.967E-13	1.180E-13	1.655E-14
Pb-210	Th-230	1.319E-06	0.000E+00	8.818E-12	7.752E-11	7.944E-10	5.755E-09	3.435E-08	1.021E-07	1.791E-07
Pb-210	Th-230	2.771E-10	0.000E+00	1.852E-15	1.628E-14	1.669E-13	1.209E-12	7.215E-12	2.144E-11	3.762E-11
Pb-210	Th-230	2.637E-10	0.000E+00	1.762E-15	1.549E-14	1.588E-13	1.150E-12	6.864E-12	2.040E-11	3.579E-11
Pb-210	Th-230	5.538E-14	0.000E+00	3.702E-19	3.254E-18	3.335E-17	2.416E-16	1.442E-15	4.285E-15	7.518E-15
Pb-210	Th-230	2.640E-13	0.000E+00	1.764E-18	1.551E-17	1.589E-16	1.152E-15	6.872E-15	2.043E-14	3.584E-14
Pb-210	U-234	1.319E-06	0.000E+00	2.709E-17	7.173E-16	2.485E-14	5.597E-13	1.200E-11	1.068E-10	4.218E-10
Pb-210	U-234	2.771E-10	0.000E+00	5.689E-21	1.507E-19	5.220E-18	1.176E-16	2.519E-15	2.243E-14	8.860E-14
Pb-210	U-234	2.637E-10	0.000E+00	5.413E-21	1.433E-19	4.967E-18	1.118E-16	2.397E-15	2.134E-14	8.429E-14
Pb-210	U-234	5.538E-14	0.000E+00	1.137E-24	3.011E-23	1.043E-21	2.349E-20	5.035E-19	4.483E-18	1.771E-17
Pb-210	U-234	2.640E-13	0.000E+00	5.420E-24	1.435E-22	4.973E-21	1.120E-19	2.400E-18	2.137E-17	8.439E-17
Pb-210	U-238	2.111E-09	0.000E+00	3.063E-26	2.440E-24	2.842E-22	1.962E-20	1.473E-18	4.019E-17	4.240E-16
Pb-210	U-238	4.434E-13	0.000E+00	6.434E-30	5.124E-28	5.969E-26	4.120E-24	3.093E-22	8.441E-21	8.905E-20
Pb-210	U-238	4.219E-13	0.000E+00	6.121E-30	4.875E-28	5.679E-26	3.920E-24	2.943E-22	8.031E-21	8.473E-20
Pb-210	U-238	8.862E-17	0.000E+00	1.286E-33	1.024E-31	1.193E-29	8.234E-28	6.181E-26	1.687E-24	1.780E-23
Pb-210	U-238	4.224E-16	0.000E+00	6.129E-33	4.881E-31	5.686E-29	3.925E-27	2.946E-25	8.040E-24	8.483E-23
Pb-210	U-238	1.317E-06	0.000E+00	1.911E-23	1.522E-21	1.773E-19	1.224E-17	9.189E-16	2.508E-14	2.646E-13
Pb-210	U-238	2.767E-10	0.000E+00	4.015E-27	3.198E-25	3.725E-23	2.571E-21	1.930E-19	5.267E-18	5.557E-17
Pb-210	U-238	2.633E-10	0.000E+00	3.820E-27	3.042E-25	3.544E-23	2.446E-21	1.836E-19	5.011E-18	5.287E-17
Pb-210	U-238	5.530E-14	0.000E+00	8.023E-31	6.390E-29	7.443E-27	5.138E-25	3.857E-23	1.053E-21	1.110E-20
Pb-210	U-238	2.636E-13	0.000E+00	3.824E-30	3.046E-28	3.548E-26	2.449E-24	1.838E-22	5.017E-21	5.293E-20
Pb-210	ΣS(j):		0.000E+00	4.050E-08	1.173E-07	3.469E-07	7.544E-07	1.018E-06	6.925E-07	2.624E-07
Ra-226	Ra-226	1.899E-08	1.899E-08	1.894E-08	1.883E-08	1.847E-08	1.746E-08	1.434E-08	8.182E-09	1.147E-09
Ra-226	Ra-226	2.100E-04	2.100E-04	2.094E-04	2.082E-04	2.041E-04	1.930E-04	1.586E-04	9.045E-05	1.268E-05
Ra-226	ΣS(j):		2.100E-04	2.094E-04	2.082E-04	2.042E-04	1.930E-04	1.586E-04	9.046E-05	1.268E-05
Ra-226	Ra-226	2.771E-10	2.771E-10	2.764E-10	2.748E-10	2.695E-10	2.548E-10	2.093E-10	1.194E-10	1.674E-11
Ra-226	Ra-226	3.989E-12	3.989E-12	3.978E-12	3.956E-12	3.879E-12	3.667E-12	3.013E-12	1.719E-12	2.409E-13
Ra-226	ΣS(j):		2.811E-10	2.803E-10	2.788E-10	2.734E-10	2.584E-10	2.123E-10	1.211E-10	1.698E-11
Ra-226	Ra-226	1.998E-04	1.998E-04	1.992E-04	1.981E-04	1.942E-04	1.836E-04	1.509E-04	8.606E-05	1.206E-05
Ra-226	Ra-226	2.637E-10	2.637E-10	2.629E-10	2.615E-10	2.564E-10	2.424E-10	1.991E-10	1.136E-10	1.592E-11
Ra-226	Th-230	1.998E-04	0.000E+00	8.642E-08	2.585E-07	8.533E-07	2.489E-06	7.541E-06	1.751E-05	2.872E-05
Ra-226	Th-230	2.637E-10	0.000E+00	1.141E-13	3.412E-13	1.126E-12	3.286E-12	9.954E-12	2.312E-11	3.792E-11
Ra-226	Th-230	3.795E-12	0.000E+00	1.642E-15	4.912E-15	1.621E-14	4.730E-14	1.433E-13	3.327E-13	5.458E-13
Ra-226	U-234	1.998E-04	0.000E+00	3.971E-13	3.559E-12	3.898E-11	3.368E-10	3.251E-09	1.986E-08	6.845E-08
Ra-226	U-234	2.637E-10	0.000E+00	5.241E-19	4.698E-18	5.146E-17	4.446E-16	4.291E-15	2.622E-14	9.036E-14
Ra-226	U-234	3.795E-12	0.000E+00	7.544E-21	6.762E-20	7.407E-19	6.400E-18	6.177E-17	3.773E-16	1.301E-15
Ra-226	U-238	3.196E-07	0.000E+00	5.977E-22	1.606E-20	5.851E-19	1.507E-17	4.739E-16	8.100E-15	7.002E-14
Ra-226	U-238	4.219E-13	0.000E+00	7.890E-28	2.120E-26	7.724E-25	1.989E-23	6.255E-22	1.069E-20	9.243E-20

Summary : Residential (Rural)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	0.000E+00	1.136E-29	3.052E-28	1.112E-26	2.864E-25	9.003E-24	1.539E-22	1.330E-21
Ra-226	U-238	1.994E-04	0.000E+00	3.730E-19	1.002E-17	3.651E-16	9.404E-15	2.957E-13	5.055E-12	4.369E-11
Ra-226	U-238	2.633E-10	0.000E+00	4.923E-25	1.323E-23	4.820E-22	1.241E-20	3.903E-19	6.672E-18	5.768E-17
Ra-226	U-238	3.789E-12	0.000E+00	7.087E-27	1.904E-25	6.937E-24	1.787E-22	5.618E-21	9.604E-20	8.302E-19
Ra-226	ΣS(j):		1.998E-04	1.993E-04	1.983E-04	1.951E-04	1.861E-04	1.584E-04	1.036E-04	4.086E-05
Ra-226	Ra-226	3.795E-12	3.795E-12	3.785E-12	3.764E-12	3.690E-12	3.489E-12	2.867E-12	1.635E-12	2.292E-13
Ra-226	Ra-226	4.196E-08	4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	ΣS(j):		4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	Ra-226	5.538E-14	5.538E-14	5.523E-14	5.492E-14	5.385E-14	5.091E-14	4.183E-14	2.386E-14	3.345E-15
Ra-226	Ra-226	7.972E-16	7.972E-16	7.950E-16	7.905E-16	7.751E-16	7.328E-16	6.021E-16	3.434E-16	4.814E-17
Ra-226	ΣS(j):		5.618E-14	5.602E-14	5.571E-14	5.463E-14	5.164E-14	4.243E-14	2.420E-14	3.393E-15
Ra-226	Ra-226	2.000E-07	2.000E-07	1.994E-07	1.983E-07	1.945E-07	1.838E-07	1.511E-07	8.616E-08	1.208E-08
Ra-226	Ra-226	2.640E-13	2.640E-13	2.633E-13	2.618E-13	2.567E-13	2.427E-13	1.994E-13	1.137E-13	1.594E-14
Ra-226	Th-230	2.000E-07	0.000E+00	8.652E-11	2.588E-10	8.543E-10	2.492E-09	7.550E-09	1.753E-08	2.876E-08
Ra-226	Th-230	2.640E-13	0.000E+00	1.142E-16	3.417E-16	1.128E-15	3.290E-15	9.966E-15	2.314E-14	3.796E-14
Ra-226	Th-230	3.800E-15	0.000E+00	1.644E-18	4.918E-18	1.623E-17	4.736E-17	1.434E-16	3.331E-16	5.464E-16
Ra-226	U-234	2.000E-07	0.000E+00	3.975E-16	3.563E-15	3.903E-14	3.372E-13	3.255E-12	1.988E-11	6.853E-11
Ra-226	U-234	2.640E-13	0.000E+00	5.248E-22	4.704E-21	5.152E-20	4.452E-19	4.296E-18	2.625E-17	9.046E-17
Ra-226	U-234	3.800E-15	0.000E+00	7.553E-24	6.770E-23	7.416E-22	6.408E-21	6.184E-20	3.778E-19	1.302E-18
Ra-226	U-238	3.200E-10	0.000E+00	5.984E-25	1.608E-23	5.858E-22	1.509E-20	4.744E-19	8.110E-18	7.011E-17
Ra-226	U-238	4.224E-16	0.000E+00	7.899E-31	2.123E-29	7.733E-28	1.992E-26	6.262E-25	1.071E-23	9.254E-23
Ra-226	U-238	6.080E-18	0.000E+00	1.137E-32	3.056E-31	1.113E-29	2.867E-28	9.014E-27	1.541E-25	1.332E-24
Ra-226	U-238	1.997E-07	0.000E+00	3.734E-22	1.003E-20	3.656E-19	9.416E-18	2.960E-16	5.061E-15	4.375E-14
Ra-226	U-238	2.636E-13	0.000E+00	4.929E-28	1.325E-26	4.826E-25	1.243E-23	3.908E-22	6.680E-21	5.775E-20
Ra-226	U-238	3.794E-15	0.000E+00	7.095E-30	1.907E-28	6.946E-27	1.789E-25	5.625E-24	9.615E-23	8.312E-22
Ra-226	ΣS(j):		2.000E-07	1.995E-07	1.986E-07	1.953E-07	1.863E-07	1.586E-07	1.037E-07	4.091E-08
Ra-226	Ra-226	3.800E-15	3.800E-15	3.789E-15	3.768E-15	3.695E-15	3.493E-15	2.870E-15	1.637E-15	2.295E-16
Th-230	Th-230	9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.984E-01	9.960E-01	9.877E-01
Th-230	Th-230	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.318E-06	1.315E-06	1.304E-06
Th-230	U-234	9.996E-01	0.000E+00	9.176E-06	2.744E-05	9.040E-05	2.624E-04	7.816E-04	1.742E-03	2.644E-03
Th-230	U-234	1.319E-06	0.000E+00	1.211E-11	3.622E-11	1.193E-10	3.464E-10	1.032E-09	2.299E-09	3.490E-09
Th-230	U-234	1.899E-08	0.000E+00	1.743E-13	5.213E-13	1.718E-12	4.986E-12	1.485E-11	3.310E-11	5.023E-11
Th-230	U-234	2.100E-04	0.000E+00	1.927E-09	5.763E-09	1.899E-08	5.512E-08	1.642E-07	3.659E-07	5.553E-07
Th-230	U-234	2.771E-10	0.000E+00	2.544E-15	7.607E-15	2.506E-14	7.275E-14	2.167E-13	4.830E-13	7.330E-13
Th-230	U-234	3.989E-12	0.000E+00	3.662E-17	1.095E-16	3.608E-16	1.047E-15	3.119E-15	6.952E-15	1.055E-14
Th-230	U-234	1.998E-04	0.000E+00	1.834E-09	5.483E-09	1.807E-08	5.244E-08	1.562E-07	3.481E-07	5.283E-07
Th-230	U-234	2.637E-10	0.000E+00	2.421E-15	7.238E-15	2.385E-14	6.922E-14	2.062E-13	4.595E-13	6.974E-13
Th-230	U-234	3.795E-12	0.000E+00	3.484E-17	1.042E-16	3.432E-16	9.963E-16	2.968E-15	6.614E-15	1.004E-14
Th-230	U-234	4.196E-08	0.000E+00	3.852E-13	1.152E-12	3.795E-12	1.101E-11	3.281E-11	7.312E-11	1.110E-10
Th-230	U-234	5.538E-14	0.000E+00	5.084E-19	1.520E-18	5.009E-18	1.454E-17	4.331E-17	9.651E-17	1.465E-16
Th-230	U-234	7.972E-16	0.000E+00	7.318E-21	2.188E-20	7.210E-20	2.093E-19	6.233E-19	1.389E-18	2.108E-18
Th-230	U-234	2.000E-07	0.000E+00	1.836E-12	5.490E-12	1.809E-11	5.250E-11	1.564E-10	3.485E-10	5.290E-10
Th-230	U-234	2.640E-13	0.000E+00	2.424E-18	7.246E-18	2.388E-17	6.930E-17	2.064E-16	4.601E-16	6.982E-16
Th-230	U-234	3.800E-15	0.000E+00	3.488E-20	1.043E-19	3.437E-19	9.975E-19	2.971E-18	6.622E-18	1.005E-17

Summary : Residential (Rural)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	0.000E+00	2.072E-14	1.856E-13	2.031E-12	1.749E-11	1.668E-10	9.884E-10	3.158E-09
Th-230	U-238	2.111E-09	0.000E+00	2.734E-20	2.450E-19	2.680E-18	2.308E-17	2.202E-16	1.305E-15	4.168E-15
Th-230	U-238	3.039E-11	0.000E+00	3.936E-22	3.527E-21	3.858E-20	3.323E-19	3.170E-18	1.878E-17	5.999E-17
Th-230	U-238	3.359E-07	0.000E+00	4.351E-18	3.899E-17	4.265E-16	3.673E-15	3.504E-14	2.076E-13	6.632E-13
Th-230	U-238	4.434E-13	0.000E+00	5.743E-24	5.146E-23	5.630E-22	4.848E-21	4.626E-20	2.740E-19	8.754E-19
Th-230	U-238	6.383E-15	0.000E+00	8.267E-26	7.408E-25	8.104E-24	6.979E-23	6.658E-22	3.945E-21	1.260E-20
Th-230	U-238	3.196E-07	0.000E+00	4.140E-18	3.709E-17	4.058E-16	3.495E-15	3.334E-14	1.975E-13	6.310E-13
Th-230	U-238	4.219E-13	0.000E+00	5.464E-24	4.896E-23	5.357E-22	4.613E-21	4.401E-20	2.607E-19	8.329E-19
Th-230	U-238	6.073E-15	0.000E+00	7.866E-26	7.048E-25	7.710E-24	6.640E-23	6.335E-22	3.753E-21	1.199E-20
Th-230	U-238	6.713E-11	0.000E+00	8.695E-22	7.791E-21	8.524E-20	7.340E-19	7.003E-18	4.149E-17	1.325E-16
Th-230	U-238	8.862E-17	0.000E+00	1.148E-27	1.028E-26	1.125E-25	9.689E-25	9.244E-24	5.476E-23	1.749E-22
Th-230	U-238	1.276E-18	0.000E+00	1.652E-29	1.480E-28	1.620E-27	1.395E-26	1.331E-25	7.883E-25	2.518E-24
Th-230	U-238	3.200E-10	0.000E+00	4.145E-21	3.714E-20	4.063E-19	3.499E-18	3.338E-17	1.978E-16	6.318E-16
Th-230	U-238	4.224E-16	0.000E+00	5.471E-27	4.902E-26	5.363E-25	4.619E-24	4.406E-23	2.610E-22	8.339E-22
Th-230	U-238	6.080E-18	0.000E+00	7.875E-29	7.056E-28	7.720E-27	6.648E-26	6.342E-25	3.757E-24	1.200E-23
Th-230	U-238	9.980E-01	0.000E+00	1.293E-11	1.158E-10	1.267E-09	1.091E-08	1.041E-07	6.168E-07	1.970E-06
Th-230	U-238	1.317E-06	0.000E+00	1.706E-17	1.529E-16	1.673E-15	1.440E-14	1.374E-13	8.141E-13	2.601E-12
Th-230	U-238	1.896E-08	0.000E+00	2.456E-19	2.201E-18	2.408E-17	2.073E-16	1.978E-15	1.172E-14	3.744E-14
Th-230	U-238	2.096E-04	0.000E+00	2.715E-15	2.433E-14	2.662E-13	2.292E-12	2.187E-11	1.295E-10	4.138E-10
Th-230	U-238	2.767E-10	0.000E+00	3.584E-21	3.211E-20	3.513E-19	3.025E-18	2.886E-17	1.710E-16	5.463E-16
Th-230	U-238	3.983E-12	0.000E+00	5.159E-23	4.622E-22	5.057E-21	4.355E-20	4.155E-19	2.461E-18	7.863E-18
Th-230	U-238	1.994E-04	0.000E+00	2.583E-15	2.315E-14	2.532E-13	2.181E-12	2.080E-11	1.233E-10	3.937E-10
Th-230	U-238	2.633E-10	0.000E+00	3.410E-21	3.055E-20	3.343E-19	2.878E-18	2.746E-17	1.627E-16	5.197E-16
Th-230	U-238	3.789E-12	0.000E+00	4.908E-23	4.398E-22	4.811E-21	4.143E-20	3.953E-19	2.342E-18	7.481E-18
Th-230	U-238	4.189E-08	0.000E+00	5.426E-19	4.862E-18	5.319E-17	4.580E-16	4.370E-15	2.589E-14	8.270E-14
Th-230	U-238	5.530E-14	0.000E+00	7.162E-25	6.417E-24	7.021E-23	6.046E-22	5.768E-21	3.417E-20	1.092E-19
Th-230	U-238	7.959E-16	0.000E+00	1.031E-26	9.237E-26	1.011E-24	8.703E-24	8.303E-23	4.919E-22	1.571E-21
Th-230	U-238	1.997E-07	0.000E+00	2.586E-18	2.317E-17	2.535E-16	2.183E-15	2.083E-14	1.234E-13	3.942E-13
Th-230	U-238	2.636E-13	0.000E+00	3.414E-24	3.059E-23	3.347E-22	2.882E-21	2.749E-20	1.629E-19	5.204E-19
Th-230	U-238	3.794E-15	0.000E+00	4.914E-26	4.403E-25	4.817E-24	4.148E-23	3.958E-22	2.345E-21	7.490E-21
Th-230	ΣS(j):		9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.977E-01	9.903E-01
Th-230	Th-230	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.897E-08	1.892E-08	1.877E-08
Th-230	Th-230	2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Th-230	ΣS(j):		2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Ra-226	Th-230	2.100E-04	0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.926E-06	1.841E-05	3.019E-05
Ra-226	Th-230	3.989E-12	0.000E+00	1.726E-15	5.163E-15	1.704E-14	4.971E-14	1.506E-13	3.497E-13	5.736E-13
Ra-226	U-234	2.100E-04	0.000E+00	4.173E-13	3.741E-12	4.097E-11	3.540E-10	3.417E-09	2.087E-08	7.195E-08
Ra-226	U-234	2.771E-10	0.000E+00	5.509E-19	4.938E-18	5.408E-17	4.673E-16	4.510E-15	2.755E-14	9.497E-14
Ra-226	U-234	3.989E-12	0.000E+00	7.929E-21	7.107E-20	7.785E-19	6.727E-18	6.492E-17	3.966E-16	1.367E-15
Ra-226	U-238	3.359E-07	0.000E+00	6.282E-22	1.688E-20	6.150E-19	1.584E-17	4.980E-16	8.514E-15	7.360E-14
Ra-226	U-238	4.434E-13	0.000E+00	8.293E-28	2.228E-26	8.118E-25	2.091E-23	6.574E-22	1.124E-20	9.715E-20
Ra-226	U-238	6.383E-15	0.000E+00	1.194E-29	3.208E-28	1.169E-26	3.010E-25	9.463E-24	1.618E-22	1.398E-21
Ra-226	U-238	2.096E-04	0.000E+00	3.920E-19	1.053E-17	3.838E-16	9.885E-15	3.108E-13	5.313E-12	4.592E-11
Ra-226	U-238	2.767E-10	0.000E+00	5.175E-25	1.391E-23	5.066E-22	1.305E-20	4.102E-19	7.013E-18	6.062E-17
Ra-226	U-238	3.983E-12	0.000E+00	7.448E-27	2.002E-25	7.292E-24	1.878E-22	5.905E-21	1.009E-19	8.726E-19
Ra-226	ΣS(j):		0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.929E-06	1.843E-05	3.026E-05

Summary : Residential (Rural)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.770E-10	2.768E-10	2.762E-10	2.738E-10
Th-230	Th-230	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.988E-12	3.984E-12	3.975E-12	3.942E-12
Th-230	ΣS(j):		2.811E-10	2.811E-10	2.811E-10	2.811E-10	2.810E-10	2.808E-10	2.801E-10	2.778E-10
Ra-226	Th-230	2.771E-10	0.000E+00	1.199E-13	3.587E-13	1.184E-12	3.454E-12	1.046E-11	2.430E-11	3.985E-11
Th-230	Th-230	1.998E-04	1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	2.637E-10	2.637E-10	2.637E-10	2.637E-10	2.636E-10	2.636E-10	2.634E-10	2.627E-10	2.605E-10
Th-230	ΣS(j):		1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.794E-12	3.791E-12	3.782E-12	3.750E-12
Th-230	Th-230	4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.194E-08	4.191E-08	4.181E-08	4.146E-08
Th-230	ΣS(j):		4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.191E-08	4.181E-08	4.146E-08
Ra-226	Th-230	4.196E-08	0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.229E-10	1.584E-09	3.678E-09	6.033E-09
Ra-226	Th-230	7.972E-16	0.000E+00	3.449E-19	1.032E-18	3.405E-18	9.935E-18	3.009E-17	6.989E-17	1.146E-16
Ra-226	U-234	4.196E-08	0.000E+00	8.340E-17	7.475E-16	8.188E-15	7.075E-14	6.828E-13	4.172E-12	1.438E-11
Ra-226	U-234	5.538E-14	0.000E+00	1.101E-22	9.868E-22	1.081E-20	9.339E-20	9.014E-19	5.506E-18	1.898E-17
Ra-226	U-234	7.972E-16	0.000E+00	1.585E-24	1.420E-23	1.556E-22	1.344E-21	1.297E-20	7.926E-20	2.732E-19
Ra-226	U-238	6.713E-11	0.000E+00	1.255E-25	3.374E-24	1.229E-22	3.166E-21	9.953E-20	1.701E-18	1.471E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.657E-31	4.453E-30	1.622E-28	4.179E-27	1.314E-25	2.246E-24	1.941E-23
Ra-226	U-238	1.276E-18	0.000E+00	2.385E-33	6.410E-32	2.335E-30	6.015E-29	1.891E-27	3.233E-26	2.794E-25
Ra-226	U-238	4.189E-08	0.000E+00	7.834E-23	2.105E-21	7.669E-20	1.975E-18	6.211E-17	1.062E-15	9.178E-15
Ra-226	U-238	5.530E-14	0.000E+00	1.034E-28	2.779E-27	1.012E-25	2.607E-24	8.198E-23	1.401E-21	1.211E-20
Ra-226	U-238	7.959E-16	0.000E+00	1.488E-30	4.000E-29	1.457E-27	3.753E-26	1.180E-24	2.017E-23	1.744E-22
Ra-226	ΣS(j):		0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.230E-10	1.585E-09	3.683E-09	6.048E-09
Th-230	Th-230	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.536E-14	5.532E-14	5.519E-14	5.473E-14
Th-230	Th-230	7.972E-16	7.972E-16	7.972E-16	7.972E-16	7.971E-16	7.969E-16	7.962E-16	7.943E-16	7.877E-16
Th-230	ΣS(j):		5.618E-14	5.618E-14	5.618E-14	5.618E-14	5.616E-14	5.611E-14	5.598E-14	5.551E-14
Ra-226	Th-230	5.538E-14	0.000E+00	2.396E-17	7.168E-17	2.366E-16	6.902E-16	2.091E-15	4.855E-15	7.964E-15
Th-230	Th-230	2.000E-07	2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.639E-13	2.637E-13	2.631E-13	2.609E-13
Th-230	ΣS(j):		2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.799E-15	3.795E-15	3.786E-15	3.755E-15
U-234	U-234	9.996E-01	9.996E-01	9.963E-01	9.897E-01	9.669E-01	9.048E-01	7.171E-01	3.690E-01	3.607E-02
U-234	U-234	1.319E-06	1.319E-06	1.315E-06	1.306E-06	1.276E-06	1.194E-06	9.465E-07	4.871E-07	4.761E-08
U-234	U-238	1.599E-03	0.000E+00	4.501E-09	1.341E-08	4.368E-08	1.226E-07	3.240E-07	5.003E-07	1.632E-07
U-234	U-238	2.111E-09	0.000E+00	5.941E-15	1.770E-14	5.766E-14	1.619E-13	4.276E-13	6.604E-13	2.154E-13
U-234	U-238	3.039E-11	0.000E+00	8.551E-17	2.548E-16	8.299E-16	2.330E-15	6.155E-15	9.505E-15	3.100E-15
U-234	U-238	3.359E-07	0.000E+00	9.453E-13	2.817E-12	9.175E-12	2.576E-11	6.805E-11	1.051E-10	3.427E-11
U-234	U-238	4.434E-13	0.000E+00	1.248E-18	3.719E-18	1.211E-17	3.400E-17	8.982E-17	1.387E-16	4.524E-17
U-234	U-238	6.383E-15	0.000E+00	1.796E-20	5.353E-20	1.743E-19	4.894E-19	1.293E-18	1.997E-18	6.512E-19
U-234	U-238	3.196E-07	0.000E+00	8.994E-13	2.680E-12	8.729E-12	2.451E-11	6.474E-11	9.997E-11	3.261E-11
U-234	U-238	4.219E-13	0.000E+00	1.187E-18	3.538E-18	1.152E-17	3.235E-17	8.546E-17	1.320E-16	4.304E-17

Summary : Residential (Rural)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	0.000E+00	1.709E-20	5.093E-20	1.659E-19	4.656E-19	1.230E-18	1.900E-18	6.195E-19
U-234	U-238	6.713E-11	0.000E+00	1.889E-16	5.630E-16	1.834E-15	5.147E-15	1.360E-14	2.100E-14	6.849E-15
U-234	U-238	8.862E-17	0.000E+00	2.494E-22	7.432E-22	2.420E-21	6.794E-21	1.795E-20	2.772E-20	9.040E-21
U-234	U-238	1.276E-18	0.000E+00	3.589E-24	1.070E-23	3.484E-23	9.780E-23	2.584E-22	3.990E-22	1.301E-22
U-234	U-238	3.200E-10	0.000E+00	9.005E-16	2.684E-15	8.740E-15	2.453E-14	6.482E-14	1.001E-13	3.265E-14
U-234	U-238	4.224E-16	0.000E+00	1.189E-21	3.542E-21	1.154E-20	3.239E-20	8.556E-20	1.321E-19	4.309E-20
U-234	U-238	6.080E-18	0.000E+00	1.711E-23	5.099E-23	1.661E-22	4.662E-22	1.232E-21	1.902E-21	6.203E-22
U-234	U-238	9.980E-01	0.000E+00	2.808E-06	8.369E-06	2.726E-05	7.652E-05	2.022E-04	3.122E-04	1.018E-04
U-234	U-238	1.317E-06	0.000E+00	3.707E-12	1.105E-11	3.598E-11	1.010E-10	2.668E-10	4.121E-10	1.344E-10
U-234	U-238	1.896E-08	0.000E+00	5.336E-14	1.590E-13	5.179E-13	1.454E-12	3.841E-12	5.931E-12	1.934E-12
U-234	U-238	2.096E-04	0.000E+00	5.899E-10	1.758E-09	5.725E-09	1.607E-08	4.246E-08	6.557E-08	2.139E-08
U-234	U-238	2.767E-10	0.000E+00	7.787E-16	2.320E-15	7.557E-15	2.122E-14	5.605E-14	8.655E-14	2.823E-14
U-234	U-238	3.983E-12	0.000E+00	1.121E-17	3.340E-17	1.088E-16	3.054E-16	8.068E-16	1.246E-15	4.063E-16
U-234	U-238	1.994E-04	0.000E+00	5.612E-10	1.673E-09	5.447E-09	1.529E-08	4.040E-08	6.238E-08	2.035E-08
U-234	U-238	2.633E-10	0.000E+00	7.408E-16	2.208E-15	7.190E-15	2.018E-14	5.333E-14	8.235E-14	2.686E-14
U-234	U-238	3.789E-12	0.000E+00	1.066E-17	3.178E-17	1.035E-16	2.905E-16	7.676E-16	1.185E-15	3.866E-16
U-234	U-238	4.189E-08	0.000E+00	1.179E-13	3.513E-13	1.144E-12	3.212E-12	8.486E-12	1.310E-11	4.274E-12
U-234	U-238	5.530E-14	0.000E+00	1.556E-19	4.637E-19	1.510E-18	4.240E-18	1.120E-17	1.730E-17	5.641E-18
U-234	U-238	7.959E-16	0.000E+00	2.240E-21	6.675E-21	2.174E-20	6.102E-20	1.612E-19	2.490E-19	8.120E-20
U-234	U-238	1.997E-07	0.000E+00	5.619E-13	1.675E-12	5.454E-12	1.531E-11	4.045E-11	6.246E-11	2.037E-11
U-234	U-238	2.636E-13	0.000E+00	7.417E-19	2.210E-18	7.199E-18	2.021E-17	5.339E-17	8.245E-17	2.689E-17
U-234	U-238	3.794E-15	0.000E+00	1.068E-20	3.182E-20	1.036E-19	2.909E-19	7.685E-19	1.187E-18	3.871E-19
U-234	ΣS(j):		9.996E-01	9.963E-01	9.897E-01	9.670E-01	9.049E-01	7.173E-01	3.693E-01	3.617E-02
U-234	U-234	1.899E-08	1.899E-08	1.893E-08	1.880E-08	1.837E-08	1.719E-08	1.362E-08	7.011E-09	6.853E-10
U-234	U-234	2.100E-04	2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.900E-04	1.506E-04	7.750E-05	7.576E-06
U-234	ΣS(j):		2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.901E-04	1.506E-04	7.751E-05	7.576E-06
U-234	U-234	2.771E-10	2.771E-10	2.762E-10	2.744E-10	2.681E-10	2.509E-10	1.988E-10	1.023E-10	1.000E-11
U-234	U-234	3.989E-12	3.989E-12	3.976E-12	3.950E-12	3.859E-12	3.611E-12	2.862E-12	1.473E-12	1.439E-13
U-234	ΣS(j):		2.811E-10	2.802E-10	2.783E-10	2.719E-10	2.545E-10	2.017E-10	1.038E-10	1.014E-11
U-234	U-234	1.998E-04	1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	2.637E-10	2.637E-10	2.628E-10	2.611E-10	2.551E-10	2.387E-10	1.892E-10	9.733E-11	9.514E-12
U-234	ΣS(j):		1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	3.795E-12	3.795E-12	3.783E-12	3.758E-12	3.671E-12	3.435E-12	2.723E-12	1.401E-12	1.369E-13
U-234	U-234	4.196E-08	4.196E-08	4.182E-08	4.154E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	ΣS(j):		4.196E-08	4.182E-08	4.155E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	U-234	5.538E-14	5.538E-14	5.520E-14	5.484E-14	5.357E-14	5.013E-14	3.973E-14	2.044E-14	1.998E-15
U-234	U-234	7.972E-16	7.972E-16	7.946E-16	7.893E-16	7.712E-16	7.216E-16	5.719E-16	2.943E-16	2.876E-17
U-234	ΣS(j):		5.618E-14	5.600E-14	5.562E-14	5.435E-14	5.085E-14	4.030E-14	2.074E-14	2.027E-15
U-234	U-234	2.000E-07	2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	2.640E-13	2.640E-13	2.631E-13	2.614E-13	2.554E-13	2.390E-13	1.894E-13	9.745E-14	9.526E-15
U-234	ΣS(j):		2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	3.800E-15	3.800E-15	3.787E-15	3.762E-15	3.676E-15	3.440E-15	2.726E-15	1.403E-15	1.371E-16

Summary : Residential (Rural)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	5.450E-07	5.432E-07	5.396E-07	5.272E-07	4.933E-07	3.911E-07	2.014E-07	1.972E-08
U-238	U-238	1.599E-03	1.599E-03	1.594E-03	1.583E-03	1.547E-03	1.448E-03	1.148E-03	5.909E-04	5.787E-05
U-238	ΣS(j):		1.600E-03	1.595E-03	1.584E-03	1.548E-03	1.448E-03	1.148E-03	5.911E-04	5.789E-05
U-238	U-238	2.111E-09	2.111E-09	2.104E-09	2.090E-09	2.042E-09	1.911E-09	1.515E-09	7.800E-10	7.639E-11
U-238	U-238	3.039E-11	3.039E-11	3.029E-11	3.009E-11	2.940E-11	2.751E-11	2.180E-11	1.123E-11	1.100E-12
U-238	ΣS(j):		2.142E-09	2.134E-09	2.120E-09	2.072E-09	1.939E-09	1.537E-09	7.912E-10	7.749E-11
U-238	U-238	3.359E-07	3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	4.434E-13	4.434E-13	4.420E-13	4.390E-13	4.290E-13	4.014E-13	3.182E-13	1.638E-13	1.605E-14
U-238	ΣS(j):		3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	6.383E-15	6.383E-15	6.362E-15	6.319E-15	6.174E-15	5.778E-15	4.580E-15	2.358E-15	2.310E-16
U-238	U-238	3.196E-07	3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	ΣS(j):		3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	U-238	4.219E-13	4.219E-13	4.205E-13	4.177E-13	4.081E-13	3.819E-13	3.027E-13	1.559E-13	1.527E-14
U-238	U-238	6.073E-15	6.073E-15	6.053E-15	6.012E-15	5.874E-15	5.497E-15	4.357E-15	2.244E-15	2.197E-16
U-238	ΣS(j):		4.280E-13	4.265E-13	4.237E-13	4.140E-13	3.874E-13	3.071E-13	1.581E-13	1.549E-14
U-238	U-238	6.713E-11	6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	8.862E-17	8.862E-17	8.832E-17	8.774E-17	8.572E-17	8.022E-17	6.359E-17	3.274E-17	3.206E-18
U-238	ΣS(j):		6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	1.276E-18	1.276E-18	1.271E-18	1.263E-18	1.234E-18	1.155E-18	9.153E-19	4.712E-19	4.615E-20
U-238	U-238	3.200E-10	3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	ΣS(j):		3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	U-238	4.224E-16	4.224E-16	4.210E-16	4.182E-16	4.086E-16	3.824E-16	3.031E-16	1.561E-16	1.528E-17
U-238	U-238	6.080E-18	6.080E-18	6.060E-18	6.020E-18	5.882E-18	5.504E-18	4.363E-18	2.246E-18	2.200E-19
U-238	ΣS(j):		4.285E-16	4.271E-16	4.242E-16	4.145E-16	3.879E-16	3.075E-16	1.583E-16	1.550E-17
U-238	U-238	9.980E-01	9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.317E-06	1.317E-06	1.313E-06	1.304E-06	1.274E-06	1.192E-06	9.453E-07	4.867E-07	4.767E-08
U-238	ΣS(j):		9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.896E-08	1.896E-08	1.890E-08	1.877E-08	1.834E-08	1.716E-08	1.361E-08	7.005E-09	6.861E-10
U-238	U-238	2.096E-04	2.096E-04	2.089E-04	2.075E-04	2.028E-04	1.898E-04	1.504E-04	7.744E-05	7.585E-06
U-238	ΣS(j):		2.096E-04	2.089E-04	2.076E-04	2.028E-04	1.898E-04	1.504E-04	7.745E-05	7.586E-06
U-238	U-238	2.767E-10	2.767E-10	2.758E-10	2.740E-10	2.677E-10	2.505E-10	1.985E-10	1.022E-10	1.001E-11
U-238	U-238	3.983E-12	3.983E-12	3.970E-12	3.943E-12	3.853E-12	3.605E-12	2.858E-12	1.471E-12	1.441E-13
U-238	ΣS(j):		2.807E-10	2.798E-10	2.779E-10	2.715E-10	2.541E-10	2.014E-10	1.037E-10	1.016E-11
U-238	U-238	1.994E-04	1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	2.633E-10	2.633E-10	2.624E-10	2.607E-10	2.547E-10	2.383E-10	1.889E-10	9.726E-11	9.526E-12
U-238	ΣS(j):		1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	3.789E-12	3.789E-12	3.777E-12	3.752E-12	3.666E-12	3.430E-12	2.719E-12	1.400E-12	1.371E-13

Summary : Residential (Rural)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	4.189E-08	4.175E-08	4.148E-08	4.052E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	ΣS(j):		4.189E-08	4.176E-08	4.148E-08	4.053E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	U-238	5.530E-14	5.530E-14	5.511E-14	5.475E-14	5.349E-14	5.006E-14	3.968E-14	2.043E-14	2.001E-15
U-238	U-238	7.959E-16	7.959E-16	7.933E-16	7.880E-16	7.699E-16	7.205E-16	5.711E-16	2.941E-16	2.880E-17
U-238	ΣS(j):		5.609E-14	5.591E-14	5.554E-14	5.426E-14	5.078E-14	4.025E-14	2.072E-14	2.030E-15
U-238	U-238	1.997E-07	1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	2.636E-13	2.636E-13	2.627E-13	2.610E-13	2.550E-13	2.386E-13	1.891E-13	9.738E-14	9.537E-15
U-238	ΣS(j):		1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	3.794E-15	3.794E-15	3.781E-15	3.756E-15	3.670E-15	3.434E-15	2.722E-15	1.402E-15	1.373E-16

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 170.38 seconds

Total water/soil iteration failures = 2.130E+02.

RESidual RADioactivity (ResRad) Dose-Modeling Output
Recreator (Backpacker)

Summary : RESRAD Recreator (Backpacker)

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Time = 0.000E+00	13
Time = 1.000E+00	14
Time = 3.000E+00	15
Time = 1.000E+01	16
Time = 3.000E+01	17
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Summary : RESRAD Recreator (Backpacker)

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1 (1)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1 (2)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1 (3)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1 (4)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1 (5)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1 (6)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1 (7)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1 (8)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1 (9)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1 (10)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1 (11)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1 (12)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1 (13)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1 (14)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1 (15)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1 (16)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1 (17)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1 (18)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1 (19)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1 (20)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.129E-02	2.077E-02	DCF2 (1)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2 (2)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2 (3)
B-1	Po-210	1.580E-02	1.582E-02	DCF2 (4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2 (5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2 (8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2 (11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2 (14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2 (17)
B-1	Th-230	3.760E-01	3.759E-01	DCF2 (20)
B-1	U-234	3.480E-02	3.479E-02	DCF2 (35)
B-1	U-238	2.970E-02	2.973E-02	DCF2 (50)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2 (51)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2 (66)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	2.585E-03	2.575E-03	DCF3 (1)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3 (2)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3 (3)
D-1	Po-210	4.480E-03	4.477E-03	DCF3 (4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3 (8)
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3 (11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3 (14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3 (17)
D-1	Th-230	7.920E-04	7.918E-04	DCF3 (20)
D-1	U-234	1.830E-04	1.831E-04	DCF3 (35)

Summary : RESRAD Recreator (Backpacker)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	U-238	1.650E-04	1.650E-04	DCF3(50)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(51)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(66)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(35,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(35,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(35,3)
D-34				

Summary : RESRAD Recreator (Backpacker)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(50,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(50,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(50,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(66,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(66,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(66,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(35,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(35,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(50,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(50,2)
D-5				

Summary : RESRAD Recreator (Backpacker)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5				
D-5	U-238+D1 , fish	1.000E+01	1.000E+01	BIOFAC(66,1)
D-5	U-238+D1 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(66,2)
D-5				

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Recreator (Backpacker)

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.200E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(35)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(50)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(35)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(50)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ

Summary : RESRAD Recreator (Backpacker)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(4)
R016	Unsat. zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.632E-02	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(5)
R016	Unsat. zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(20)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)

Summary : RESRAD Recreator (Backpacker)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (35)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (35,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (35)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (35)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (35)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (50)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (50,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (50)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (50)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (50)
R017	Inhalation rate (m**3/yr)	2.520E+02	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.800E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)

Summary : RESRAD Recreator (Backpacker)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.700E+00	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Summary : RESRAD Recreator (Backpacker)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary : RESRAD Recreator (Backpacker)

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Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : RESRAD Recreator (Backpacker)

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Pb-210	1.000E+00
Thickness:	2.00 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	1.000E+00
		Th-230	1.000E+00
		U-234	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.827E-01	3.818E-01	3.800E-01	3.737E-01	3.564E-01	3.031E-01	1.977E-01	7.746E-02
M(t):	3.189E-02	3.182E-02	3.166E-02	3.114E-02	2.970E-02	2.526E-02	1.648E-02	6.455E-03

Maximum TDOSE(t): 3.827E-01 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Recreator (Backpacker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.742E-04	0.0007	5.108E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.183E-04	0.0008
Po-210	9.260E-07	0.0000	1.254E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-04	0.0003
Ra-226	3.758E-01	0.9818	6.210E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.155E-05	0.0002
Th-230	1.221E-04	0.0003	6.543E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.118E-05	0.0001
U-234	1.309E-05	0.0000	6.045E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.180E-05	0.0000
U-238	5.851E-03	0.0153	5.164E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.145E-05	0.0000
Total	3.820E-01	0.9982	8.921E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.963E-04	0.0016

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.977E-04	0.0016
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.342E-04	0.0004
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.758E-01	0.9821
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.387E-04	0.0006
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.094E-05	0.0001
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.868E-03	0.0153
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.827E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Recreator (Backpacker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.661E-04	0.0007	5.968E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.159E-04	0.0011
Po-210	1.462E-07	0.0000	1.981E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.085E-05	0.0001
Ra-226	3.747E-01	0.9815	6.370E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.330E-05	0.0002
Th-230	2.847E-04	0.0007	6.543E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.121E-05	0.0001
U-234	1.305E-05	0.0000	6.026E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.176E-05	0.0000
U-238	5.832E-03	0.0153	5.147E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.141E-05	0.0000
Total	3.811E-01	0.9982	8.914E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.945E-04	0.0016

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.880E-04	0.0018
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.119E-05	0.0001
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.748E-01	0.9817
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.013E-04	0.0011
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.084E-05	0.0001
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.848E-03	0.0153
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.818E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Recreator (Backpacker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.493E-04	0.0007	5.770E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.086E-04	0.0011
Po-210	3.645E-09	0.0000	4.937E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.197E-07	0.0000
Ra-226	3.726E-01	0.9807	6.703E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.088E-04	0.0003
Th-230	6.084E-04	0.0016	6.543E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.129E-05	0.0001
U-234	1.297E-05	0.0000	5.987E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.169E-05	0.0000
U-238	5.793E-03	0.0152	5.113E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.133E-05	0.0000
Total	3.793E-01	0.9982	8.901E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.923E-04	0.0016

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.637E-04	0.0017
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.283E-07	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.727E-01	0.9810
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.252E-04	0.0019
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.065E-05	0.0001
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.809E-03	0.0153
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.800E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Recreator (Backpacker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.980E-04	0.0005	4.587E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.250E-04	0.0009
Po-210	8.913E-15	0.0000	1.207E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.271E-12	0.0000
Ra-226	3.654E-01	0.9779	7.688E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.858E-04	0.0005
Th-230	1.727E-03	0.0046	6.545E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.174E-05	0.0001
U-234	1.275E-05	0.0000	5.854E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.142E-05	0.0000
U-238	5.660E-03	0.0151	4.996E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.107E-05	0.0000
Total	3.730E-01	0.9982	8.857E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.850E-04	0.0016

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.276E-04	0.0014
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.292E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.656E-01	0.9784
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.845E-03	0.0049
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.003E-05	0.0001
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.676E-03	0.0152
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.737E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Recreator (Backpacker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.026E-04	0.0003	2.376E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.684E-04	0.0005
Po-210	0.000E+00	0.0000	1.118E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.177E-28	0.0000
Ra-226	3.456E-01	0.9695	9.304E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.198E-04	0.0009
Th-230	4.806E-03	0.0135	6.551E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.399E-05	0.0002
U-234	1.252E-05	0.0000	5.489E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.070E-05	0.0000
U-238	5.296E-03	0.0149	4.675E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.036E-05	0.0000
Total	3.558E-01	0.9982	8.735E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.632E-04	0.0016

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.733E-04	0.0008
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.188E-28	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.459E-01	0.9704
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.926E-03	0.0138
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.870E-05	0.0001
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.311E-03	0.0149
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.564E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Recreator (Backpacker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.027E-05	0.0000	2.378E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.685E-05	0.0001
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.840E-01	0.9370	9.424E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.889E-04	0.0013
Th-230	1.431E-02	0.0472	6.575E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.549E-05	0.0002
U-234	1.561E-05	0.0001	4.388E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.512E-06	0.0000
U-238	4.198E-03	0.0139	3.707E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.217E-06	0.0000
Total	3.025E-01	0.9981	8.350E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.879E-04	0.0016

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.735E-05	0.0001
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.844E-01	0.9383
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.444E-02	0.0477
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.851E-05	0.0001
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.210E-03	0.0139
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.031E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Recreator (Backpacker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.429E-08	0.0000	3.309E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.345E-08	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.620E-01	0.8194	5.516E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.318E-04	0.0012
Th-230	3.309E-02	0.1673	6.623E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.201E-05	0.0005
U-234	4.243E-05	0.0002	2.347E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.489E-06	0.0000
U-238	2.162E-03	0.0109	1.910E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.233E-06	0.0000
Total	1.973E-01	0.9979	7.600E-05	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.325E-04	0.0017

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.806E-08	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.622E-01	0.8206
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.324E-02	0.1681
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.926E-05	0.0002
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.168E-03	0.0110
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.977E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Recreator (Backpacker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.437E-18	0.0000	3.328E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.358E-18	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.271E-02	0.2932	7.733E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.249E-05	0.0004
Th-230	5.419E-02	0.6995	6.640E-05	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.218E-04	0.0016
U-234	1.296E-04	0.0017	3.953E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.293E-07	0.0000
U-238	2.118E-04	0.0027	1.876E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.156E-07	0.0000
Total	7.724E-02	0.9971	6.776E-05	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.555E-04	0.0020

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.828E-18	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.274E-02	0.2936
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.438E-02	0.7020
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.308E-04	0.0017
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.124E-04	0.0027
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.746E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Recreator (Backpacker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Pb-210+D	Pb-210+D	1.000E+00	4.411E-04	4.268E-04	3.996E-04	3.174E-04	1.644E-04	1.645E-05	2.290E-08	2.303E-18	
Pb-210+D	Po-210	1.000E+00	1.566E-04	2.612E-04	2.641E-04	2.102E-04	1.089E-04	1.090E-05	1.516E-08	1.525E-18	
Pb-210+D	ΣDSR(j)		5.977E-04	6.880E-04	6.637E-04	5.276E-04	2.733E-04	2.735E-05	3.806E-08	3.828E-18	
Pb-210+D1	Pb-210+D1	1.320E-06	1.179E-09	1.140E-09	1.068E-09	8.482E-10	4.394E-10	4.397E-11	6.119E-14	6.154E-24	
Pb-210+D2	Pb-210+D2	1.900E-08	4.299E-10	4.160E-10	3.895E-10	3.094E-10	1.603E-10	1.604E-11	2.232E-14	2.245E-24	
Po-210	Po-210	1.000E+00	1.342E-04	2.119E-05	5.283E-07	1.292E-12	1.196E-28	0.000E+00	0.000E+00	0.000E+00	
Ra-226+D	Ra-226+D	9.996E-01	3.756E-01	3.745E-01	3.724E-01	3.652E-01	3.452E-01	2.836E-01	1.618E-01	2.268E-02	
Ra-226+D	Pb-210+D	9.996E-01	6.914E-06	2.042E-05	4.601E-05	1.223E-04	2.564E-04	3.338E-04	2.001E-04	2.806E-05	
Ra-226+D	Po-210	9.996E-01	1.851E-06	8.875E-06	2.550E-05	7.611E-05	1.652E-04	2.172E-04	1.303E-04	1.827E-05	
Ra-226+D	ΣDSR(j)		3.756E-01	3.745E-01	3.725E-01	3.654E-01	3.456E-01	2.842E-01	1.621E-01	2.273E-02	
Ra-226+D	Ra-226+D	1.319E-06	4.957E-07	4.943E-07	4.916E-07	4.820E-07	4.557E-07	3.744E-07	2.136E-07	2.994E-08	
Ra-226+D	Pb-210+D1	1.319E-06	1.847E-11	5.456E-11	1.229E-10	3.268E-10	6.851E-10	8.919E-10	5.347E-10	7.496E-11	
Ra-226+D	ΣDSR(j)		4.958E-07	4.944E-07	4.917E-07	4.823E-07	4.564E-07	3.753E-07	2.141E-07	3.001E-08	
Ra-226+D	Ra-226+D	1.899E-08	7.136E-09	7.116E-09	7.076E-09	6.938E-09	6.559E-09	5.389E-09	3.074E-09	4.309E-10	
Ra-226+D	Pb-210+D2	1.899E-08	6.739E-12	1.990E-11	4.485E-11	1.192E-10	2.499E-10	3.254E-10	1.951E-10	2.735E-11	
Ra-226+D	ΣDSR(j)		7.142E-09	7.135E-09	7.121E-09	7.057E-09	6.809E-09	5.715E-09	3.269E-09	4.583E-10	
Ra-226+D1	Ra-226+D1	2.100E-04	2.054E-04	2.048E-04	2.037E-04	1.997E-04	1.888E-04	1.551E-04	8.848E-05	1.240E-05	
Ra-226+D1	Pb-210+D	2.100E-04	1.452E-09	4.288E-09	9.665E-09	2.569E-08	5.386E-08	7.011E-08	4.203E-08	5.893E-09	
Ra-226+D1	Po-210	2.100E-04	3.889E-10	1.864E-09	5.356E-09	1.599E-08	3.469E-08	4.563E-08	2.738E-08	3.838E-09	
Ra-226+D1	ΣDSR(j)		2.054E-04	2.048E-04	2.037E-04	1.997E-04	1.889E-04	1.552E-04	8.855E-05	1.241E-05	
Ra-226+D1	Ra-226+D1	2.771E-10	2.711E-10	2.704E-10	2.688E-10	2.636E-10	2.492E-10	2.048E-10	1.168E-10	1.637E-11	
Ra-226+D1	Pb-210+D1	2.771E-10	3.880E-15	1.146E-14	2.582E-14	6.865E-14	1.439E-13	1.873E-13	1.123E-13	1.575E-14	
Ra-226+D1	ΣDSR(j)		2.711E-10	2.704E-10	2.689E-10	2.637E-10	2.494E-10	2.049E-10	1.169E-10	1.639E-11	
Ra-226+D1	Ra-226+D1	3.989E-12	3.902E-12	3.891E-12	3.870E-12	3.794E-12	3.587E-12	2.947E-12	1.681E-12	2.357E-13	
Ra-226+D1	Pb-210+D2	3.989E-12	1.416E-15	4.180E-15	9.421E-15	2.504E-14	5.250E-14	6.834E-14	4.097E-14	5.744E-15	
Ra-226+D1	ΣDSR(j)		3.904E-12	3.896E-12	3.879E-12	3.819E-12	3.640E-12	3.016E-12	1.722E-12	2.414E-13	
Ra-226+D2	Ra-226+D2	1.998E-04	6.593E-05	6.574E-05	6.538E-05	6.410E-05	6.060E-05	4.979E-05	2.840E-05	3.981E-06	
Ra-226+D2	Pb-210+D	1.998E-04	1.382E-09	4.080E-09	9.195E-09	2.444E-08	5.124E-08	6.670E-08	3.999E-08	5.607E-09	
Ra-226+D2	Po-210	1.998E-04	3.700E-10	1.774E-09	5.096E-09	1.521E-08	3.301E-08	4.341E-08	2.605E-08	3.652E-09	
Ra-226+D2	ΣDSR(j)		6.593E-05	6.575E-05	6.539E-05	6.414E-05	6.069E-05	4.990E-05	2.847E-05	3.991E-06	
Ra-226+D2	Ra-226+D2	2.637E-10	8.703E-11	8.678E-11	8.630E-11	8.462E-11	8.000E-11	6.573E-11	3.749E-11	5.255E-12	
Ra-226+D2	Pb-210+D1	2.637E-10	3.692E-15	1.090E-14	2.457E-14	6.531E-14	1.369E-13	1.782E-13	1.069E-13	1.498E-14	
Ra-226+D2	ΣDSR(j)		8.703E-11	8.679E-11	8.632E-11	8.468E-11	8.013E-11	6.591E-11	3.760E-11	5.270E-12	

Summary : RESRAD Recreator (Backpacker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D2	Ra-226+D2	3.795E-12	1.253E-12	1.249E-12	1.242E-12	1.218E-12	1.151E-12	9.461E-13	5.397E-13	7.565E-14
Ra-226+D2	Pb-210+D2	3.795E-12	1.347E-15	3.977E-15	8.963E-15	2.383E-14	4.995E-14	6.502E-14	3.898E-14	5.465E-15
Ra-226+D2	ΣDSR(j)		1.254E-12	1.253E-12	1.251E-12	1.242E-12	1.201E-12	1.011E-12	5.786E-13	8.111E-14
Ra-226+D3	Ra-226+D3	4.196E-08	3.913E-08	3.902E-08	3.880E-08	3.805E-08	3.597E-08	2.955E-08	1.686E-08	2.363E-09
Ra-226+D3	Pb-210+D	4.196E-08	2.902E-13	8.570E-13	1.931E-12	5.134E-12	1.076E-11	1.401E-11	8.400E-12	1.178E-12
Ra-226+D3	Po-210	4.196E-08	7.772E-14	3.725E-13	1.070E-12	3.195E-12	6.933E-12	9.118E-12	5.471E-12	7.670E-13
Ra-226+D3	ΣDSR(j)		3.913E-08	3.902E-08	3.880E-08	3.805E-08	3.599E-08	2.958E-08	1.687E-08	2.365E-09
Ra-226+D3	Ra-226+D3	5.538E-14	5.165E-14	5.151E-14	5.122E-14	5.022E-14	4.748E-14	3.901E-14	2.225E-14	3.119E-15
Ra-226+D3	Pb-210+D1	5.538E-14	7.755E-19	2.290E-18	5.161E-18	1.372E-17	2.876E-17	3.744E-17	2.244E-17	3.147E-18
Ra-226+D3	ΣDSR(j)		5.165E-14	5.151E-14	5.122E-14	5.023E-14	4.751E-14	3.905E-14	2.227E-14	3.122E-15
Ra-226+D3	Ra-226+D3	7.972E-16	7.434E-16	7.414E-16	7.372E-16	7.229E-16	6.834E-16	5.615E-16	3.203E-16	4.490E-17
Ra-226+D3	Pb-210+D2	7.972E-16	2.829E-19	8.354E-19	1.883E-18	5.004E-18	1.049E-17	1.366E-17	8.188E-18	1.148E-18
Ra-226+D3	ΣDSR(j)		7.437E-16	7.422E-16	7.391E-16	7.279E-16	6.939E-16	5.752E-16	3.285E-16	4.604E-17
Ra-226+D4	Ra-226+D4	2.000E-07	2.955E-10	2.947E-10	2.930E-10	2.873E-10	2.716E-10	2.232E-10	1.273E-10	1.785E-11
Ra-226+D4	Pb-210+D	2.000E-07	1.383E-12	4.085E-12	9.206E-12	2.447E-11	5.130E-11	6.679E-11	4.004E-11	5.613E-12
Ra-226+D4	Po-210	2.000E-07	3.704E-13	1.776E-12	5.102E-12	1.523E-11	3.305E-11	4.346E-11	2.608E-11	3.656E-12
Ra-226+D4	ΣDSR(j)		2.973E-10	3.005E-10	3.073E-10	3.270E-10	3.560E-10	3.334E-10	1.934E-10	2.712E-11
Ra-226+D4	Ra-226+D4	2.640E-13	3.901E-16	3.890E-16	3.868E-16	3.793E-16	3.586E-16	2.946E-16	1.681E-16	2.356E-17
Ra-226+D4	Pb-210+D1	2.640E-13	3.696E-18	1.092E-17	2.460E-17	6.539E-17	1.371E-16	1.785E-16	1.070E-16	1.500E-17
Ra-226+D4	ΣDSR(j)		3.938E-16	3.999E-16	4.114E-16	4.447E-16	4.957E-16	4.731E-16	2.750E-16	3.856E-17
Ra-226+D4	Ra-226+D4	3.800E-15	5.615E-18	5.599E-18	5.568E-18	5.459E-18	5.161E-18	4.241E-18	2.419E-18	3.391E-19
Ra-226+D4	Pb-210+D2	3.800E-15	1.348E-18	3.982E-18	8.974E-18	2.385E-17	5.001E-17	6.510E-17	3.903E-17	5.472E-18
Ra-226+D4	ΣDSR(j)		6.963E-18	9.581E-18	1.454E-17	2.931E-17	5.517E-17	6.934E-17	4.145E-17	5.811E-18
Th-230	Th-230	9.996E-01	1.572E-04	1.572E-04	1.572E-04	1.572E-04	1.572E-04	1.570E-04	1.567E-04	1.553E-04
Th-230	Ra-226+D	9.996E-01	8.139E-05	2.439E-04	5.674E-04	1.686E-03	4.762E-03	1.426E-02	3.301E-02	5.408E-02
Th-230	Pb-210+D	9.996E-01	1.001E-09	6.939E-09	3.585E-08	2.960E-07	2.010E-06	1.174E-05	3.472E-05	6.084E-05
Th-230	Po-210	9.996E-01	2.167E-10	2.430E-09	1.733E-08	1.746E-07	1.269E-06	7.584E-06	2.255E-05	3.957E-05
Th-230	ΣDSR(j)		2.386E-04	4.011E-04	7.247E-04	1.843E-03	4.922E-03	1.443E-02	3.322E-02	5.434E-02
Th-230	Th-230	1.319E-06	2.075E-10	2.075E-10	2.075E-10	2.075E-10	2.075E-10	2.073E-10	2.068E-10	2.051E-10
Th-230	Ra-226+D	1.319E-06	1.074E-10	3.219E-10	7.490E-10	2.225E-09	6.285E-09	1.882E-08	4.357E-08	7.139E-08
Th-230	Pb-210+D1	1.319E-06	2.676E-15	1.854E-14	9.579E-14	7.909E-13	5.371E-12	3.137E-11	9.277E-11	1.626E-10
Th-230	ΣDSR(j)		3.150E-10	5.294E-10	9.566E-10	2.433E-09	6.498E-09	1.906E-08	4.387E-08	7.176E-08
Th-230	Th-230	1.899E-08	2.987E-12	2.987E-12	2.987E-12	2.987E-12	2.986E-12	2.984E-12	2.976E-12	2.952E-12
Th-230	Ra-226+D	1.899E-08	1.546E-12	4.633E-12	1.078E-11	3.203E-11	9.047E-11	2.709E-10	6.271E-10	1.028E-09
Th-230	Pb-210+D2	1.899E-08	9.761E-16	6.764E-15	3.494E-14	2.885E-13	1.959E-12	1.144E-11	3.384E-11	5.931E-11
Th-230	ΣDSR(j)		4.535E-12	7.627E-12	1.380E-11	3.530E-11	9.542E-11	2.853E-10	6.639E-10	1.090E-09

Summary : RESRAD Recreator (Backpacker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.100E-04	3.302E-08	3.302E-08	3.302E-08	3.302E-08	3.301E-08	3.298E-08	3.290E-08	3.263E-08
Th-230	Ra-226+D1	2.100E-04	4.451E-08	1.334E-07	3.103E-07	9.219E-07	2.604E-06	7.798E-06	1.805E-05	2.958E-05
Th-230	Pb-210+D	2.100E-04	2.103E-13	1.457E-12	7.530E-12	6.217E-11	4.222E-10	2.466E-09	7.292E-09	1.278E-08
Th-230	Po-210	2.100E-04	4.552E-14	5.104E-13	3.640E-12	3.668E-11	2.665E-10	1.593E-09	4.736E-09	8.310E-09
Th-230	ΣDSR(j)		7.753E-08	1.664E-07	3.433E-07	9.550E-07	2.638E-06	7.835E-06	1.810E-05	2.963E-05
Th-230	Th-230	2.771E-10	4.359E-14	4.359E-14	4.359E-14	4.359E-14	4.357E-14	4.354E-14	4.343E-14	4.307E-14
Th-230	Ra-226+D1	2.771E-10	5.875E-14	1.760E-13	4.096E-13	1.217E-12	3.437E-12	1.029E-11	2.383E-11	3.904E-11
Th-230	Pb-210+D1	2.771E-10	5.620E-19	3.894E-18	2.012E-17	1.661E-16	1.128E-15	6.588E-15	1.949E-14	3.415E-14
Th-230	ΣDSR(j)		1.023E-13	2.196E-13	4.532E-13	1.261E-12	3.482E-12	1.034E-11	2.389E-11	3.912E-11
Th-230	Th-230	3.989E-12	6.274E-16	6.274E-16	6.274E-16	6.274E-16	6.272E-16	6.267E-16	6.252E-16	6.200E-16
Th-230	Ra-226+D1	3.989E-12	8.457E-16	2.534E-15	5.896E-15	1.752E-14	4.948E-14	1.482E-13	3.430E-13	5.620E-13
Th-230	Pb-210+D2	3.989E-12	2.050E-19	1.421E-18	7.340E-18	6.060E-17	4.116E-16	2.403E-15	7.108E-15	1.246E-14
Th-230	ΣDSR(j)		1.473E-15	3.163E-15	6.531E-15	1.820E-14	5.052E-14	1.512E-13	3.507E-13	5.750E-13
Th-230	Th-230	1.998E-04	3.142E-08	3.142E-08	3.142E-08	3.142E-08	3.141E-08	3.138E-08	3.131E-08	3.104E-08
Th-230	Ra-226+D2	1.998E-04	1.429E-08	4.281E-08	9.961E-08	2.959E-07	8.359E-07	2.503E-06	5.794E-06	9.494E-06
Th-230	Pb-210+D	1.998E-04	2.001E-13	1.387E-12	7.164E-12	5.915E-11	4.017E-10	2.346E-09	6.938E-09	1.216E-08
Th-230	Po-210	1.998E-04	4.331E-14	4.856E-13	3.463E-12	3.490E-11	2.535E-10	1.515E-09	4.506E-09	7.907E-09
Th-230	ΣDSR(j)		4.571E-08	7.423E-08	1.310E-07	3.274E-07	8.680E-07	2.538E-06	5.837E-06	9.545E-06
Th-230	Th-230	2.637E-10	4.147E-14	4.147E-14	4.147E-14	4.147E-14	4.146E-14	4.142E-14	4.132E-14	4.098E-14
Th-230	Ra-226+D2	2.637E-10	1.886E-14	5.651E-14	1.315E-13	3.906E-13	1.103E-12	3.304E-12	7.648E-12	1.253E-11
Th-230	Pb-210+D1	2.637E-10	5.347E-19	3.705E-18	1.914E-17	1.580E-16	1.073E-15	6.268E-15	1.854E-14	3.249E-14
Th-230	ΣDSR(j)		6.033E-14	9.798E-14	1.730E-13	4.322E-13	1.146E-12	3.352E-12	7.708E-12	1.261E-11
Th-230	Th-230	3.795E-12	5.970E-16	5.970E-16	5.969E-16	5.969E-16	5.967E-16	5.962E-16	5.948E-16	5.899E-16
Th-230	Ra-226+D2	3.795E-12	2.715E-16	8.134E-16	1.893E-15	5.622E-15	1.588E-14	4.756E-14	1.101E-13	1.804E-13
Th-230	Pb-210+D2	3.795E-12	1.951E-19	1.352E-18	6.983E-18	5.765E-17	3.916E-16	2.287E-15	6.763E-15	1.185E-14
Th-230	ΣDSR(j)		8.686E-16	1.412E-15	2.497E-15	6.277E-15	1.687E-14	5.044E-14	1.174E-13	1.928E-13
Th-230	Th-230	4.196E-08	6.599E-12	6.599E-12	6.599E-12	6.599E-12	6.597E-12	6.591E-12	6.576E-12	6.521E-12
Th-230	Ra-226+D3	4.196E-08	8.480E-12	2.541E-11	5.912E-11	1.756E-10	4.961E-10	1.486E-09	3.439E-09	5.635E-09
Th-230	Pb-210+D	4.196E-08	4.203E-17	2.913E-16	1.505E-15	1.242E-14	8.438E-14	4.927E-13	1.457E-12	2.554E-12
Th-230	Po-210	4.196E-08	9.097E-18	1.020E-16	7.275E-16	7.330E-15	5.325E-14	3.183E-13	9.465E-13	1.661E-12
Th-230	ΣDSR(j)		1.508E-11	3.201E-11	6.572E-11	1.822E-10	5.028E-10	1.493E-09	3.448E-09	5.645E-09
Th-230	Th-230	5.538E-14	8.711E-18	8.711E-18	8.711E-18	8.710E-18	8.708E-18	8.701E-18	8.680E-18	8.607E-18
Th-230	Ra-226+D3	5.538E-14	1.119E-17	3.354E-17	7.804E-17	2.318E-16	6.549E-16	1.961E-15	4.539E-15	7.438E-15
Th-230	Pb-210+D1	5.538E-14	1.123E-22	7.783E-22	4.021E-21	3.320E-20	2.255E-19	1.317E-18	3.894E-18	6.824E-18
Th-230	ΣDSR(j)		1.990E-17	4.225E-17	8.675E-17	2.406E-16	6.638E-16	1.971E-15	4.552E-15	7.453E-15
Th-230	Th-230	7.972E-16	1.254E-19	1.254E-19	1.254E-19	1.254E-19	1.253E-19	1.252E-19	1.249E-19	1.239E-19
Th-230	Ra-226+D3	7.972E-16	1.611E-19	4.827E-19	1.123E-18	3.337E-18	9.426E-18	2.823E-17	6.534E-17	1.071E-16
Th-230	Pb-210+D2	7.972E-16	4.097E-23	2.839E-22	1.467E-21	1.211E-20	8.225E-20	4.803E-19	1.421E-18	2.489E-18
Th-230	ΣDSR(j)		2.865E-19	6.084E-19	1.250E-18	3.474E-18	9.634E-18	2.883E-17	6.688E-17	1.097E-16

Summary : RESRAD Recreator (Backpacker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.000E-07	3.146E-11	3.146E-11	3.146E-11	3.145E-11	3.145E-11	3.142E-11	3.134E-11	3.108E-11
Th-230	Ra-226+D4	2.000E-07	6.404E-14	1.919E-13	4.465E-13	1.326E-12	3.747E-12	1.122E-11	2.597E-11	4.256E-11
Th-230	Pb-210+D	2.000E-07	2.004E-16	1.388E-15	7.173E-15	5.922E-14	4.022E-13	2.349E-12	6.947E-12	1.217E-11
Th-230	Po-210	2.000E-07	4.336E-17	4.862E-16	3.468E-15	3.494E-14	2.538E-13	1.517E-12	4.512E-12	7.916E-12
Th-230	ΣDSR(j)		3.152E-11	3.165E-11	3.191E-11	3.287E-11	3.585E-11	4.650E-11	6.877E-11	9.373E-11
Th-230	Th-230	2.640E-13	4.152E-17	4.152E-17	4.152E-17	4.152E-17	4.151E-17	4.147E-17	4.137E-17	4.103E-17
Th-230	Ra-226+D4	2.640E-13	8.453E-20	2.533E-19	5.894E-19	1.751E-18	4.946E-18	1.481E-17	3.428E-17	5.617E-17
Th-230	Pb-210+D1	2.640E-13	5.354E-22	3.710E-21	1.917E-20	1.582E-19	1.075E-18	6.276E-18	1.856E-17	3.253E-17
Th-230	ΣDSR(j)		4.161E-17	4.178E-17	4.213E-17	4.343E-17	4.753E-17	6.256E-17	9.422E-17	1.297E-16
Th-230	Th-230	3.800E-15	5.977E-19	5.977E-19	5.977E-19	5.976E-19	5.975E-19	5.970E-19	5.955E-19	5.906E-19
Th-230	Ra-226+D4	3.800E-15	1.217E-21	3.646E-21	8.483E-21	2.520E-20	7.119E-20	2.132E-19	4.934E-19	8.086E-19
Th-230	Pb-210+D2	3.800E-15	1.953E-22	1.353E-21	6.992E-21	5.772E-20	3.921E-19	2.289E-18	6.771E-18	1.187E-17
Th-230	ΣDSR(j)		5.991E-19	6.027E-19	6.131E-19	6.805E-19	1.061E-18	3.100E-18	7.860E-18	1.327E-17
U-234	U-234	9.996E-01	3.093E-05	3.083E-05	3.062E-05	2.992E-05	2.800E-05	2.219E-05	1.142E-05	1.116E-06
U-234	Th-230	9.996E-01	7.221E-10	2.163E-09	5.030E-09	1.492E-08	4.193E-08	1.234E-07	2.742E-07	4.158E-07
U-234	Ra-226+D	9.996E-01	2.493E-10	1.742E-09	9.172E-09	8.089E-08	6.549E-07	6.176E-06	3.748E-05	1.289E-04
U-234	Pb-210+D	9.996E-01	2.305E-15	3.428E-14	3.926E-13	9.746E-12	1.989E-10	4.121E-09	3.637E-08	1.433E-07
U-234	Po-210	9.996E-01	4.199E-16	1.021E-14	1.693E-13	5.479E-12	1.233E-10	2.647E-09	2.358E-08	9.317E-08
U-234	ΣDSR(j)		3.093E-05	3.083E-05	3.064E-05	3.001E-05	2.869E-05	2.849E-05	4.923E-05	1.307E-04
U-234	U-234	1.319E-06	4.083E-11	4.069E-11	4.042E-11	3.949E-11	3.695E-11	2.929E-11	1.507E-11	1.473E-12
U-234	Th-230	1.319E-06	9.531E-16	2.855E-15	6.640E-15	1.969E-14	5.534E-14	1.630E-13	3.620E-13	5.489E-13
U-234	Ra-226+D	1.319E-06	3.291E-16	2.300E-15	1.211E-14	1.068E-13	8.644E-13	8.152E-12	4.947E-11	1.702E-10
U-234	Pb-210+D1	1.319E-06	6.158E-21	9.161E-20	1.049E-18	2.604E-17	5.315E-16	1.101E-14	9.719E-14	3.829E-13
U-234	ΣDSR(j)		4.083E-11	4.070E-11	4.044E-11	3.962E-11	3.787E-11	3.761E-11	6.500E-11	1.726E-10
U-234	U-234	1.899E-08	5.876E-13	5.857E-13	5.818E-13	5.684E-13	5.319E-13	4.215E-13	2.169E-13	2.120E-14
U-234	Th-230	1.899E-08	1.372E-17	4.110E-17	9.558E-17	2.834E-16	7.966E-16	2.346E-15	5.211E-15	7.901E-15
U-234	Ra-226+D	1.899E-08	4.737E-18	3.310E-17	1.743E-16	1.537E-15	1.244E-14	1.173E-13	7.121E-13	2.449E-12
U-234	Pb-210+D2	1.899E-08	2.246E-21	3.342E-20	3.827E-19	9.500E-18	1.939E-16	4.017E-15	3.545E-14	1.397E-13
U-234	ΣDSR(j)		5.877E-13	5.858E-13	5.821E-13	5.703E-13	5.453E-13	5.453E-13	9.697E-13	2.618E-12
U-234	U-234	2.100E-04	6.496E-09	6.475E-09	6.432E-09	6.284E-09	5.880E-09	4.660E-09	2.398E-09	2.344E-10
U-234	Th-230	2.100E-04	1.517E-13	4.543E-13	1.057E-12	3.133E-12	8.806E-12	2.593E-11	5.760E-11	8.734E-11
U-234	Ra-226+D1	2.100E-04	1.363E-13	9.528E-13	5.016E-12	4.424E-11	3.581E-10	3.378E-09	2.050E-08	7.050E-08
U-234	Pb-210+D	2.100E-04	4.841E-19	7.201E-18	8.247E-17	2.047E-15	4.178E-14	8.657E-13	7.640E-12	3.010E-11
U-234	Po-210	2.100E-04	8.820E-20	2.145E-18	3.556E-17	1.151E-15	2.589E-14	5.560E-13	4.954E-12	1.957E-11
U-234	ΣDSR(j)		6.497E-09	6.476E-09	6.438E-09	6.332E-09	6.247E-09	8.065E-09	2.297E-08	7.087E-08
U-234	U-234	2.771E-10	8.575E-15	8.547E-15	8.490E-15	8.295E-15	7.762E-15	6.151E-15	3.165E-15	3.094E-16
U-234	Th-230	2.771E-10	2.002E-19	5.997E-19	1.395E-18	4.136E-18	1.162E-17	3.423E-17	7.604E-17	1.153E-16
U-234	Ra-226+D1	2.771E-10	1.800E-19	1.258E-18	6.621E-18	5.840E-17	4.728E-16	4.458E-15	2.706E-14	9.306E-14
U-234	Pb-210+D1	2.771E-10	1.293E-24	1.924E-23	2.204E-22	5.470E-21	1.116E-19	2.313E-18	2.041E-17	8.043E-17
U-234	ΣDSR(j)		8.576E-15	8.549E-15	8.498E-15	8.358E-15	8.246E-15	1.065E-14	3.032E-14	9.356E-14

Summary : RESRAD Recreator (Backpacker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	3.989E-12	1.234E-16	1.230E-16	1.222E-16	1.194E-16	1.117E-16	8.854E-17	4.556E-17	4.454E-18
U-234	Th-230	3.989E-12	2.882E-21	8.632E-21	2.008E-20	5.953E-20	1.673E-19	4.927E-19	1.094E-18	1.660E-18
U-234	Ra-226+D1	3.989E-12	2.591E-21	1.810E-20	9.530E-20	8.405E-19	6.805E-18	6.417E-17	3.895E-16	1.339E-15
U-234	Pb-210+D2	3.989E-12	4.718E-25	7.019E-24	8.039E-23	1.995E-21	4.073E-20	8.438E-19	7.447E-18	2.934E-17
U-234	ΣDSR(j)		1.234E-16	1.230E-16	1.223E-16	1.203E-16	1.187E-16	1.541E-16	4.436E-16	1.375E-15
U-234	U-234	1.998E-04	6.181E-09	6.160E-09	6.120E-09	5.979E-09	5.595E-09	4.434E-09	2.282E-09	2.230E-10
U-234	Th-230	1.998E-04	1.443E-13	4.322E-13	1.005E-12	2.981E-12	8.378E-12	2.467E-11	5.480E-11	8.310E-11
U-234	Ra-226+D2	1.998E-04	4.377E-14	3.058E-13	1.610E-12	1.420E-11	1.150E-10	1.084E-09	6.580E-09	2.263E-08
U-234	Pb-210+D	1.998E-04	4.605E-19	6.851E-18	7.846E-17	1.948E-15	3.975E-14	8.236E-13	7.269E-12	2.864E-11
U-234	Po-210	1.998E-04	8.391E-20	2.040E-18	3.384E-17	1.095E-15	2.463E-14	5.290E-13	4.713E-12	1.862E-11
U-234	ΣDSR(j)		6.181E-09	6.161E-09	6.122E-09	5.996E-09	5.718E-09	5.544E-09	8.928E-09	2.298E-08
U-234	U-234	2.637E-10	8.159E-15	8.132E-15	8.078E-15	7.892E-15	7.385E-15	5.853E-15	3.012E-15	2.944E-16
U-234	Th-230	2.637E-10	1.905E-19	5.706E-19	1.327E-18	3.935E-18	1.106E-17	3.256E-17	7.234E-17	1.097E-16
U-234	Ra-226+D2	2.637E-10	5.777E-20	4.037E-19	2.125E-18	1.874E-17	1.518E-16	1.431E-15	8.685E-15	2.987E-14
U-234	Pb-210+D1	2.637E-10	1.231E-24	1.831E-23	2.097E-22	5.204E-21	1.062E-19	2.201E-18	1.942E-17	7.652E-17
U-234	ΣDSR(j)		8.159E-15	8.133E-15	8.081E-15	7.915E-15	7.548E-15	7.318E-15	1.179E-14	3.035E-14
U-234	U-234	3.795E-12	1.174E-16	1.170E-16	1.163E-16	1.136E-16	1.063E-16	8.424E-17	4.335E-17	4.237E-18
U-234	Th-230	3.795E-12	2.742E-21	8.213E-21	1.910E-20	5.664E-20	1.592E-19	4.687E-19	1.041E-18	1.579E-18
U-234	Ra-226+D2	3.795E-12	8.316E-22	5.811E-21	3.059E-20	2.698E-19	2.184E-18	2.060E-17	1.250E-16	4.299E-16
U-234	Pb-210+D2	3.795E-12	4.489E-25	6.678E-24	7.648E-23	1.899E-21	3.875E-20	8.028E-19	7.085E-18	2.792E-17
U-234	ΣDSR(j)		1.174E-16	1.171E-16	1.163E-16	1.139E-16	1.087E-16	1.061E-16	1.765E-16	4.637E-16
U-234	U-234	4.196E-08	1.298E-12	1.294E-12	1.285E-12	1.256E-12	1.175E-12	9.313E-13	4.792E-13	4.684E-14
U-234	Th-230	4.196E-08	3.031E-17	9.079E-17	2.112E-16	6.261E-16	1.760E-15	5.182E-15	1.151E-14	1.745E-14
U-234	Ra-226+D3	4.196E-08	2.598E-17	1.815E-16	9.556E-16	8.428E-15	6.823E-14	6.435E-13	3.905E-12	1.343E-11
U-234	Pb-210+D	4.196E-08	9.674E-23	1.439E-21	1.648E-20	4.091E-19	8.350E-18	1.730E-16	1.527E-15	6.015E-15
U-234	Po-210	4.196E-08	1.763E-23	4.286E-22	7.107E-21	2.300E-19	5.174E-18	1.111E-16	9.900E-16	3.911E-15
U-234	ΣDSR(j)		1.298E-12	1.294E-12	1.287E-12	1.265E-12	1.245E-12	1.580E-12	4.398E-12	1.350E-11
U-234	U-234	5.538E-14	1.714E-18	1.708E-18	1.697E-18	1.658E-18	1.551E-18	1.229E-18	6.326E-19	6.183E-20
U-234	Th-230	5.538E-14	4.001E-23	1.198E-22	2.787E-22	8.265E-22	2.323E-21	6.840E-21	1.520E-20	2.304E-20
U-234	Ra-226+D3	5.538E-14	3.429E-23	2.396E-22	1.261E-21	1.112E-20	9.006E-20	8.494E-19	5.155E-18	1.773E-17
U-234	Pb-210+D1	5.538E-14	2.585E-28	3.845E-27	4.404E-26	1.093E-24	2.231E-23	4.622E-22	4.079E-21	1.607E-20
U-234	ΣDSR(j)		1.714E-18	1.708E-18	1.698E-18	1.670E-18	1.644E-18	2.086E-18	5.807E-18	1.783E-17
U-234	U-234	7.972E-16	2.467E-20	2.458E-20	2.442E-20	2.386E-20	2.233E-20	1.769E-20	9.105E-21	8.900E-22
U-234	Th-230	7.972E-16	5.759E-25	1.725E-24	4.012E-24	1.190E-23	3.344E-23	9.845E-23	2.187E-22	3.316E-22
U-234	Ra-226+D3	7.972E-16	4.935E-25	3.449E-24	1.816E-23	1.601E-22	1.296E-21	1.223E-20	7.420E-20	2.552E-19
U-234	Pb-210+D2	7.972E-16	9.429E-29	1.403E-27	1.606E-26	3.988E-25	8.139E-24	1.686E-22	1.488E-21	5.864E-21
U-234	ΣDSR(j)		2.467E-20	2.459E-20	2.444E-20	2.403E-20	2.366E-20	3.019E-20	8.501E-20	2.623E-19

Summary : RESRAD Recreator (Backpacker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	2.000E-07	6.188E-12	6.168E-12	6.127E-12	5.986E-12	5.601E-12	4.439E-12	2.284E-12	2.233E-13	
U-234	Th-230	2.000E-07	1.445E-16	4.328E-16	1.006E-15	2.985E-15	8.389E-15	2.470E-14	5.487E-14	8.320E-14	
U-234	Ra-226+D4	2.000E-07	1.962E-19	1.371E-18	7.217E-18	6.365E-17	5.153E-16	4.860E-15	2.949E-14	1.014E-13	
U-234	Pb-210+D	2.000E-07	4.611E-22	6.859E-21	7.856E-20	1.950E-18	3.980E-17	8.246E-16	7.277E-15	2.867E-14	
U-234	Po-210	2.000E-07	8.401E-23	2.043E-21	3.388E-20	1.096E-18	2.466E-17	5.297E-16	4.719E-15	1.864E-14	
U-234	ΣDSR(j)		6.188E-12	6.168E-12	6.128E-12	5.989E-12	5.610E-12	4.470E-12	2.381E-12	4.552E-13	
U-234	U-234	2.640E-13	8.169E-18	8.141E-18	8.088E-18	7.902E-18	7.394E-18	5.860E-18	3.015E-18	2.947E-19	
U-234	Th-230	2.640E-13	1.907E-22	5.713E-22	1.329E-21	3.940E-21	1.107E-20	3.260E-20	7.243E-20	1.098E-19	
U-234	Ra-226+D4	2.640E-13	2.590E-25	1.809E-24	9.527E-24	8.402E-23	6.802E-22	6.415E-21	3.893E-20	1.339E-19	
U-234	Pb-210+D1	2.640E-13	1.232E-27	1.833E-26	2.099E-25	5.211E-24	1.063E-22	2.203E-21	1.945E-20	7.662E-20	
U-234	ΣDSR(j)		8.169E-18	8.142E-18	8.089E-18	7.906E-18	7.406E-18	5.901E-18	3.146E-18	6.151E-19	
U-234	U-234	3.800E-15	1.176E-19	1.172E-19	1.164E-19	1.137E-19	1.064E-19	8.434E-20	4.340E-20	4.242E-21	
U-234	Th-230	3.800E-15	2.745E-24	8.223E-24	1.912E-23	5.671E-23	1.594E-22	4.693E-22	1.043E-21	1.581E-21	
U-234	Ra-226+D4	3.800E-15	3.727E-27	2.605E-26	1.371E-25	1.209E-24	9.791E-24	9.233E-23	5.604E-22	1.927E-21	
U-234	Pb-210+D2	3.800E-15	4.495E-28	6.686E-27	7.657E-26	1.901E-24	3.880E-23	8.038E-22	7.094E-21	2.795E-20	
U-234	ΣDSR(j)		1.176E-19	1.172E-19	1.164E-19	1.138E-19	1.066E-19	8.571E-20	5.210E-20	3.570E-20	
U-238	U-238	5.450E-07	1.206E-11	1.202E-11	1.194E-11	1.166E-11	1.091E-11	8.652E-12	4.455E-12	4.363E-13	
U-238+D	U-238+D	1.599E-03	4.834E-04	4.818E-04	4.786E-04	4.676E-04	4.376E-04	3.469E-04	1.786E-04	1.749E-05	
U-238+D	U-234	1.599E-03	6.982E-14	2.088E-13	4.841E-13	1.419E-12	3.857E-12	1.007E-11	1.551E-11	5.051E-12	
U-238+D	Th-230	1.599E-03	1.087E-18	7.592E-18	3.996E-17	3.520E-16	2.840E-15	2.648E-14	1.558E-13	4.967E-13	
U-238+D	Ra-226+D	1.599E-03	2.815E-19	4.213E-18	4.893E-17	1.277E-15	2.979E-14	9.045E-13	1.531E-11	1.319E-10	
U-238+D	Pb-210+D	1.599E-03	2.084E-24	6.413E-23	1.590E-21	1.173E-19	7.094E-18	5.086E-16	1.371E-14	1.441E-13	
U-238+D	Po-210	1.599E-03	3.284E-25	1.675E-23	6.208E-22	6.302E-20	4.320E-18	3.249E-16	8.874E-15	9.365E-14	
U-238+D	ΣDSR(j)		4.834E-04	4.818E-04	4.786E-04	4.676E-04	4.376E-04	3.469E-04	1.786E-04	1.749E-05	
U-238+D	U-238+D	2.111E-09	6.381E-10	6.360E-10	6.318E-10	6.173E-10	5.776E-10	4.579E-10	2.357E-10	2.309E-11	
U-238+D	U-234	2.111E-09	9.216E-20	2.757E-19	6.391E-19	1.873E-18	5.092E-18	1.330E-17	2.047E-17	6.667E-18	
U-238+D	Th-230	2.111E-09	1.434E-24	1.002E-23	5.275E-23	4.646E-22	3.749E-21	3.495E-20	2.057E-19	6.557E-19	
U-238+D	Ra-226+D	2.111E-09	3.715E-25	5.562E-24	6.459E-23	1.685E-21	3.932E-20	1.194E-18	2.021E-17	1.741E-16	
U-238+D	Pb-210+D1	2.111E-09	5.569E-30	1.714E-28	4.249E-27	3.135E-25	1.896E-23	1.359E-21	3.663E-20	3.850E-19	
U-238+D	ΣDSR(j)		6.381E-10	6.360E-10	6.318E-10	6.173E-10	5.776E-10	4.579E-10	2.357E-10	2.309E-11	
U-238+D	U-238+D	3.039E-11	9.185E-12	9.154E-12	9.094E-12	8.885E-12	8.314E-12	6.590E-12	3.393E-12	3.323E-13	
U-238+D	U-234	3.039E-11	1.327E-21	3.968E-21	9.199E-21	2.696E-20	7.329E-20	1.914E-19	2.946E-19	9.597E-20	
U-238+D	Th-230	3.039E-11	2.065E-26	1.443E-25	7.592E-25	6.688E-24	5.396E-23	5.030E-22	2.961E-21	9.438E-21	
U-238+D	Ra-226+D	3.039E-11	5.348E-27	8.006E-26	9.298E-25	2.426E-23	5.660E-22	1.719E-20	2.909E-19	2.506E-18	
U-238+D	Pb-210+D2	3.039E-11	2.031E-30	6.251E-29	1.550E-27	1.144E-25	6.915E-24	4.958E-22	1.336E-20	1.405E-19	
U-238+D	ΣDSR(j)		9.185E-12	9.154E-12	9.094E-12	8.885E-12	8.314E-12	6.590E-12	3.393E-12	3.323E-13	

Summary : RESRAD Recreator (Backpacker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	3.359E-07	1.015E-07	1.012E-07	1.005E-07	9.822E-08	9.191E-08	7.286E-08	3.751E-08	3.674E-09
U-238+D	U-234	3.359E-07	1.467E-17	4.387E-17	1.017E-16	2.981E-16	8.102E-16	2.116E-15	3.257E-15	1.061E-15
U-238+D	Th-230	3.359E-07	2.283E-22	1.595E-21	8.393E-21	7.393E-20	5.965E-19	5.561E-18	3.273E-17	1.043E-16
U-238+D	Ra-226+D1	3.359E-07	1.539E-22	2.304E-21	2.676E-20	6.982E-19	1.629E-17	4.947E-16	8.373E-15	7.213E-14
U-238+D	Pb-210+D	3.359E-07	4.377E-28	1.347E-26	3.340E-25	2.465E-23	1.490E-21	1.068E-19	2.879E-18	3.027E-17
U-238+D	Po-210	3.359E-07	6.897E-29	3.518E-27	1.304E-25	1.324E-23	9.073E-22	6.824E-20	1.864E-18	1.967E-17
U-238+D	ΣDSR(j)		1.015E-07	1.012E-07	1.005E-07	9.822E-08	9.191E-08	7.286E-08	3.751E-08	3.674E-09
U-238+D	U-238+D	4.434E-13	1.340E-13	1.336E-13	1.327E-13	1.297E-13	1.213E-13	9.617E-14	4.952E-14	4.850E-15
U-238+D	U-234	4.434E-13	1.936E-23	5.790E-23	1.342E-22	3.935E-22	1.069E-21	2.793E-21	4.299E-21	1.400E-21
U-238+D	Th-230	4.434E-13	3.013E-28	2.105E-27	1.108E-26	9.759E-26	7.874E-25	7.340E-24	4.320E-23	1.377E-22
U-238+D	Ra-226+D1	4.434E-13	2.032E-28	3.042E-27	3.533E-26	9.216E-25	2.150E-23	6.530E-22	1.105E-20	9.522E-20
U-238+D	Pb-210+D1	4.434E-13	1.170E-33	3.599E-32	8.924E-31	6.586E-29	3.982E-27	2.854E-25	7.694E-24	8.087E-23
U-238+D	ΣDSR(j)		1.340E-13	1.336E-13	1.327E-13	1.297E-13	1.213E-13	9.617E-14	4.952E-14	4.850E-15
U-238+D	U-238+D	6.383E-15	1.929E-15	1.923E-15	1.910E-15	1.866E-15	1.746E-15	1.384E-15	7.127E-16	6.981E-17
U-238+D	U-234	6.383E-15	2.786E-25	8.335E-25	1.932E-24	5.663E-24	1.539E-23	4.020E-23	6.188E-23	2.016E-23
U-238+D	Th-230	6.383E-15	4.337E-30	3.030E-29	1.595E-28	1.405E-27	1.133E-26	1.057E-25	6.219E-25	1.982E-24
U-238+D	Ra-226+D1	6.383E-15	2.925E-30	4.378E-29	5.085E-28	1.327E-26	3.095E-25	9.399E-24	1.591E-22	1.371E-21
U-238+D	Pb-210+D2	6.383E-15	4.267E-34	1.313E-32	3.255E-31	2.402E-29	1.452E-27	1.041E-25	2.807E-24	2.950E-23
U-238+D	ΣDSR(j)		1.929E-15	1.923E-15	1.910E-15	1.866E-15	1.746E-15	1.384E-15	7.127E-16	6.981E-17
U-238+D	U-238+D	3.196E-07	9.660E-08	9.628E-08	9.565E-08	9.345E-08	8.745E-08	6.932E-08	3.569E-08	3.495E-09
U-238+D	U-234	3.196E-07	1.395E-17	4.174E-17	9.675E-17	2.836E-16	7.709E-16	2.013E-15	3.099E-15	1.009E-15
U-238+D	Th-230	3.196E-07	2.172E-22	1.517E-21	7.985E-21	7.034E-20	5.676E-19	5.291E-18	3.114E-17	9.927E-17
U-238+D	Ra-226+D2	3.196E-07	4.941E-23	7.397E-22	8.590E-21	2.241E-19	5.229E-18	1.588E-16	2.688E-15	2.315E-14
U-238+D	Pb-210+D	3.196E-07	4.165E-28	1.282E-26	3.178E-25	2.345E-23	1.418E-21	1.016E-19	2.740E-18	2.879E-17
U-238+D	Po-210	3.196E-07	6.562E-29	3.348E-27	1.241E-25	1.259E-23	8.633E-22	6.492E-20	1.773E-18	1.871E-17
U-238+D	ΣDSR(j)		9.660E-08	9.628E-08	9.565E-08	9.345E-08	8.745E-08	6.932E-08	3.569E-08	3.496E-09
U-238+D	U-238+D	4.219E-13	1.275E-13	1.271E-13	1.263E-13	1.234E-13	1.154E-13	9.150E-14	4.711E-14	4.614E-15
U-238+D	U-234	4.219E-13	1.842E-23	5.509E-23	1.277E-22	3.743E-22	1.018E-21	2.657E-21	4.090E-21	1.332E-21
U-238+D	Th-230	4.219E-13	2.867E-28	2.003E-27	1.054E-26	9.285E-26	7.492E-25	6.984E-24	4.110E-23	1.310E-22
U-238+D	Ra-226+D2	4.219E-13	6.522E-29	9.764E-28	1.134E-26	2.958E-25	6.903E-24	2.096E-22	3.548E-21	3.056E-20
U-238+D	Pb-210+D1	4.219E-13	1.113E-33	3.425E-32	8.491E-31	6.266E-29	3.788E-27	2.716E-25	7.320E-24	7.694E-23
U-238+D	ΣDSR(j)		1.275E-13	1.271E-13	1.263E-13	1.234E-13	1.154E-13	9.150E-14	4.711E-14	4.614E-15
U-238+D	U-238+D	6.073E-15	1.835E-15	1.829E-15	1.817E-15	1.776E-15	1.662E-15	1.317E-15	6.781E-16	6.641E-17
U-238+D	U-234	6.073E-15	2.651E-25	7.930E-25	1.838E-24	5.388E-24	1.465E-23	3.825E-23	5.887E-23	1.918E-23
U-238+D	Th-230	6.073E-15	4.126E-30	2.883E-29	1.517E-28	1.337E-27	1.078E-26	1.005E-25	5.916E-25	1.886E-24
U-238+D	Ra-226+D2	6.073E-15	9.388E-31	1.405E-29	1.632E-28	4.258E-27	9.936E-26	3.017E-24	5.106E-23	4.399E-22
U-238+D	Pb-210+D2	6.073E-15	4.060E-34	1.249E-32	3.097E-31	2.286E-29	1.382E-27	9.907E-26	2.670E-24	2.807E-23
U-238+D	ΣDSR(j)		1.835E-15	1.829E-15	1.817E-15	1.776E-15	1.662E-15	1.317E-15	6.781E-16	6.641E-17

Summary : RESRAD Recreator (Backpacker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	6.713E-11	2.029E-11	2.022E-11	2.009E-11	1.963E-11	1.837E-11	1.456E-11	7.496E-12	7.342E-13
U-238+D	U-234	6.713E-11	2.931E-21	8.766E-21	2.032E-20	5.957E-20	1.619E-19	4.229E-19	6.508E-19	2.120E-19
U-238+D	Th-230	6.713E-11	4.561E-26	3.187E-25	1.677E-24	1.478E-23	1.192E-22	1.111E-21	6.541E-21	2.085E-20
U-238+D	Ra-226+D3	6.713E-11	2.933E-26	4.390E-25	5.098E-24	1.330E-22	3.104E-21	9.424E-20	1.595E-18	1.374E-17
U-238+D	Pb-210+D	6.713E-11	8.748E-32	2.692E-30	6.674E-29	4.925E-27	2.978E-25	2.135E-23	5.754E-22	6.048E-21
U-238+D	Po-210	6.713E-11	1.378E-32	7.031E-31	2.606E-29	2.645E-27	1.813E-25	1.364E-23	3.725E-22	3.931E-21
U-238+D	ΣDSR(j)		2.029E-11	2.022E-11	2.009E-11	1.963E-11	1.837E-11	1.456E-11	7.496E-12	7.342E-13
U-238+D	U-238+D	8.862E-17	2.678E-17	2.670E-17	2.652E-17	2.591E-17	2.425E-17	1.922E-17	9.895E-18	9.692E-19
U-238+D	U-234	8.862E-17	3.869E-27	1.157E-26	2.682E-26	7.863E-26	2.137E-25	5.582E-25	8.591E-25	2.799E-25
U-238+D	Th-230	8.862E-17	6.021E-32	4.207E-31	2.214E-30	1.950E-29	1.574E-28	1.467E-27	8.634E-27	2.752E-26
U-238+D	Ra-226+D3	8.862E-17	3.871E-32	5.795E-31	6.730E-30	1.756E-28	4.097E-27	1.244E-25	2.106E-24	1.814E-23
U-238+D	Pb-210+D1	8.862E-17	2.337E-37	7.193E-36	1.783E-34	1.316E-32	7.957E-31	5.704E-29	1.538E-27	1.616E-26
U-238+D	ΣDSR(j)		2.678E-17	2.670E-17	2.652E-17	2.591E-17	2.425E-17	1.922E-17	9.895E-18	9.692E-19
U-238+D	U-238+D	1.276E-18	3.855E-19	3.843E-19	3.817E-19	3.729E-19	3.490E-19	2.766E-19	1.424E-19	1.395E-20
U-238+D	U-234	1.276E-18	5.568E-29	1.666E-28	3.861E-28	1.132E-27	3.076E-27	8.035E-27	1.237E-26	4.028E-27
U-238+D	Th-230	1.276E-18	8.667E-34	6.055E-33	3.187E-32	2.807E-31	2.265E-30	2.111E-29	1.243E-28	3.962E-28
U-238+D	Ra-226+D3	1.276E-18	5.572E-34	8.341E-33	9.687E-32	2.527E-30	5.897E-29	1.791E-27	3.031E-26	2.611E-25
U-238+D	Pb-210+D2	1.276E-18	8.527E-38	2.624E-36	6.506E-35	4.801E-33	2.903E-31	2.081E-29	5.609E-28	5.895E-27
U-238+D	ΣDSR(j)		3.855E-19	3.843E-19	3.817E-19	3.729E-19	3.490E-19	2.766E-19	1.424E-19	1.395E-20
U-238+D	U-238+D	3.200E-10	9.672E-11	9.640E-11	9.576E-11	9.356E-11	8.755E-11	6.940E-11	3.573E-11	3.500E-12
U-238+D	U-234	3.200E-10	1.397E-20	4.179E-20	9.687E-20	2.839E-19	7.718E-19	2.016E-18	3.102E-18	1.011E-18
U-238+D	Th-230	3.200E-10	2.174E-25	1.519E-24	7.995E-24	7.043E-23	5.682E-22	5.297E-21	3.118E-20	9.939E-20
U-238+D	Ra-226+D4	3.200E-10	2.215E-28	3.315E-27	3.850E-26	1.005E-24	2.344E-23	7.118E-22	1.205E-20	1.038E-19
U-238+D	Pb-210+D	3.200E-10	4.170E-31	1.283E-29	3.181E-28	2.348E-26	1.419E-24	1.018E-22	2.743E-21	2.883E-20
U-238+D	Po-210	3.200E-10	6.570E-32	3.352E-30	1.242E-28	1.261E-26	8.643E-25	6.500E-23	1.775E-21	1.874E-20
U-238+D	ΣDSR(j)		9.672E-11	9.640E-11	9.576E-11	9.356E-11	8.755E-11	6.940E-11	3.573E-11	3.500E-12
U-238+D	U-238+D	4.224E-16	1.277E-16	1.272E-16	1.264E-16	1.235E-16	1.156E-16	9.161E-17	4.717E-17	4.620E-18
U-238+D	U-234	4.224E-16	1.844E-26	5.516E-26	1.279E-25	3.748E-25	1.019E-24	2.661E-24	4.095E-24	1.334E-24
U-238+D	Th-230	4.224E-16	2.870E-31	2.005E-30	1.055E-29	9.297E-29	7.501E-28	6.992E-27	4.115E-26	1.312E-25
U-238+D	Ra-226+D4	4.224E-16	2.923E-34	4.376E-33	5.083E-32	1.326E-30	3.094E-29	9.395E-28	1.590E-26	1.370E-25
U-238+D	Pb-210+D1	4.224E-16	1.114E-36	3.429E-35	8.501E-34	6.273E-32	3.793E-30	2.719E-28	7.329E-27	7.703E-26
U-238+D	ΣDSR(j)		1.277E-16	1.272E-16	1.264E-16	1.235E-16	1.156E-16	9.161E-17	4.717E-17	4.620E-18
U-238+D	U-238+D	6.080E-18	1.838E-18	1.832E-18	1.819E-18	1.778E-18	1.664E-18	1.319E-18	6.789E-19	6.649E-20
U-238+D	U-234	6.080E-18	2.654E-28	7.939E-28	1.840E-27	5.395E-27	1.466E-26	3.830E-26	5.894E-26	1.920E-26
U-238+D	Th-230	6.080E-18	4.131E-33	2.886E-32	1.519E-31	1.338E-30	1.080E-29	1.006E-28	5.924E-28	1.888E-27
U-238+D	Ra-226+D4	6.080E-18	4.208E-36	6.299E-35	7.316E-34	1.909E-32	4.454E-31	1.352E-29	2.289E-28	1.972E-27
U-238+D	Pb-210+D2	6.080E-18	4.065E-37	1.251E-35	3.101E-34	2.288E-32	1.384E-30	9.919E-29	2.674E-27	2.810E-26
U-238+D	ΣDSR(j)		1.838E-18	1.832E-18	1.819E-18	1.778E-18	1.664E-18	1.319E-18	6.789E-19	6.650E-20

Summary : RESRAD Recreator (Backpacker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	9.980E-01	5.382E-03	5.364E-03	5.328E-03	5.206E-03	4.872E-03	3.862E-03	1.988E-03	1.947E-04
U-238+D1	U-234	9.980E-01	4.357E-11	1.303E-10	3.021E-10	8.855E-10	2.407E-09	6.286E-09	9.675E-09	3.152E-09
U-238+D1	Th-230	9.980E-01	6.781E-16	4.738E-15	2.493E-14	2.196E-13	1.772E-12	1.652E-11	9.723E-11	3.100E-10
U-238+D1	Ra-226+D	9.980E-01	1.756E-16	2.629E-15	3.054E-14	7.966E-13	1.859E-11	5.644E-10	9.553E-09	8.230E-08
U-238+D1	Pb-210+D	9.980E-01	1.300E-21	4.002E-20	9.922E-19	7.322E-17	4.427E-15	3.174E-13	8.554E-12	8.991E-11
U-238+D1	Po-210	9.980E-01	2.049E-22	1.045E-20	3.874E-19	3.932E-17	2.696E-15	2.027E-13	5.537E-12	5.844E-11
U-238+D1	ΣDSR(j)		5.382E-03	5.364E-03	5.328E-03	5.206E-03	4.872E-03	3.862E-03	1.988E-03	1.948E-04
U-238+D1	U-238+D1	1.317E-06	7.104E-09	7.080E-09	7.034E-09	6.872E-09	6.431E-09	5.097E-09	2.625E-09	2.570E-10
U-238+D1	U-234	1.317E-06	5.751E-17	1.720E-16	3.988E-16	1.169E-15	3.177E-15	8.298E-15	1.277E-14	4.160E-15
U-238+D1	Th-230	1.317E-06	8.951E-22	6.254E-21	3.291E-20	2.899E-19	2.339E-18	2.181E-17	1.283E-16	4.092E-16
U-238+D1	Ra-226+D	1.317E-06	2.318E-22	3.471E-21	4.031E-20	1.052E-18	2.454E-17	7.451E-16	1.261E-14	1.086E-13
U-238+D1	Pb-210+D1	1.317E-06	3.475E-27	1.069E-25	2.651E-24	1.956E-22	1.183E-20	8.480E-19	2.286E-17	2.402E-16
U-238+D1	ΣDSR(j)		7.104E-09	7.080E-09	7.034E-09	6.872E-09	6.431E-09	5.097E-09	2.625E-09	2.572E-10
U-238+D1	U-238+D1	1.896E-08	1.023E-10	1.019E-10	1.012E-10	9.891E-11	9.256E-11	7.337E-11	3.778E-11	3.700E-12
U-238+D1	U-234	1.896E-08	8.278E-19	2.476E-18	5.740E-18	1.682E-17	4.573E-17	1.194E-16	1.838E-16	5.989E-17
U-238+D1	Th-230	1.896E-08	1.288E-23	9.001E-23	4.737E-22	4.173E-21	3.367E-20	3.139E-19	1.847E-18	5.889E-18
U-238+D1	Ra-226+D	1.896E-08	3.337E-24	4.995E-23	5.802E-22	1.514E-20	3.532E-19	1.072E-17	1.815E-16	1.564E-15
U-238+D1	Pb-210+D2	1.896E-08	1.268E-27	3.901E-26	9.671E-25	7.137E-23	4.315E-21	3.094E-19	8.338E-18	8.764E-17
U-238+D1	ΣDSR(j)		1.023E-10	1.019E-10	1.012E-10	9.891E-11	9.256E-11	7.337E-11	3.778E-11	3.702E-12
U-238+D1	U-238+D1	2.096E-04	1.130E-06	1.127E-06	1.119E-06	1.093E-06	1.023E-06	8.111E-07	4.176E-07	4.090E-08
U-238+D1	U-234	2.096E-04	9.151E-15	2.737E-14	6.345E-14	1.860E-13	5.056E-13	1.320E-12	2.032E-12	6.620E-13
U-238+D1	Th-230	2.096E-04	1.424E-19	9.951E-19	5.237E-18	4.614E-17	3.722E-16	3.470E-15	2.042E-14	6.511E-14
U-238+D1	Ra-226+D1	2.096E-04	9.605E-20	1.438E-18	1.670E-17	4.357E-16	1.017E-14	3.087E-13	5.225E-12	4.501E-11
U-238+D1	Pb-210+D	2.096E-04	2.732E-25	8.406E-24	2.084E-22	1.538E-20	9.298E-19	6.666E-17	1.797E-15	1.889E-14
U-238+D1	Po-210	2.096E-04	4.304E-26	2.196E-24	8.137E-23	8.260E-21	5.662E-19	4.258E-17	1.163E-15	1.227E-14
U-238+D1	ΣDSR(j)		1.130E-06	1.127E-06	1.119E-06	1.093E-06	1.023E-06	8.111E-07	4.176E-07	4.095E-08
U-238+D1	U-238+D1	2.767E-10	1.492E-12	1.487E-12	1.477E-12	1.443E-12	1.351E-12	1.071E-12	5.513E-13	5.399E-14
U-238+D1	U-234	2.767E-10	1.208E-20	3.613E-20	8.376E-20	2.455E-19	6.674E-19	1.743E-18	2.683E-18	8.739E-19
U-238+D1	Th-230	2.767E-10	1.880E-25	1.314E-24	6.913E-24	6.090E-23	4.914E-22	4.580E-21	2.696E-20	8.594E-20
U-238+D1	Ra-226+D1	2.767E-10	1.268E-25	1.898E-24	2.204E-23	5.751E-22	1.342E-20	4.075E-19	6.896E-18	5.942E-17
U-238+D1	Pb-210+D1	2.767E-10	7.299E-31	2.246E-29	5.569E-28	4.109E-26	2.484E-24	1.781E-22	4.801E-21	5.046E-20
U-238+D1	ΣDSR(j)		1.492E-12	1.487E-12	1.477E-12	1.443E-12	1.351E-12	1.071E-12	5.513E-13	5.405E-14
U-238+D1	U-238+D1	3.983E-12	2.148E-14	2.141E-14	2.126E-14	2.078E-14	1.944E-14	1.541E-14	7.935E-15	7.771E-16
U-238+D1	U-234	3.983E-12	1.739E-22	5.201E-22	1.206E-21	3.534E-21	9.606E-21	2.509E-20	3.861E-20	1.258E-20
U-238+D1	Th-230	3.983E-12	2.706E-27	1.891E-26	9.951E-26	8.766E-25	7.073E-24	6.593E-23	3.880E-22	1.237E-21
U-238+D1	Ra-226+D1	3.983E-12	1.825E-27	2.732E-26	3.173E-25	8.277E-24	1.932E-22	5.865E-21	9.927E-20	8.552E-19
U-238+D1	Pb-210+D2	3.983E-12	2.663E-31	8.194E-30	2.031E-28	1.499E-26	9.063E-25	6.498E-23	1.751E-21	1.841E-20
U-238+D1	ΣDSR(j)		2.148E-14	2.141E-14	2.126E-14	2.078E-14	1.944E-14	1.541E-14	7.935E-15	7.780E-16

Summary : RESRAD Recreator (Backpacker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.994E-04	1.075E-06	1.072E-06	1.065E-06	1.040E-06	9.736E-07	7.717E-07	3.973E-07	3.892E-08
U-238+D1	U-234	1.994E-04	8.707E-15	2.604E-14	6.037E-14	1.770E-13	4.810E-13	1.256E-12	1.933E-12	6.299E-13
U-238+D1	Th-230	1.994E-04	1.355E-19	9.468E-19	4.983E-18	4.389E-17	3.542E-16	3.301E-15	1.943E-14	6.194E-14
U-238+D1	Ra-226+D2	1.994E-04	3.083E-20	4.615E-19	5.360E-18	1.398E-16	3.263E-15	9.909E-14	1.677E-12	1.445E-11
U-238+D1	Pb-210+D	1.994E-04	2.599E-25	7.997E-24	1.983E-22	1.463E-20	8.846E-19	6.342E-17	1.709E-15	1.797E-14
U-238+D1	Po-210	1.994E-04	4.095E-26	2.089E-24	7.742E-23	7.858E-21	5.387E-19	4.051E-17	1.107E-15	1.168E-14
U-238+D1	ΣDSR(j)		1.075E-06	1.072E-06	1.065E-06	1.040E-06	9.736E-07	7.717E-07	3.973E-07	3.893E-08
U-238+D1	U-238+D1	2.633E-10	1.420E-12	1.415E-12	1.406E-12	1.373E-12	1.285E-12	1.019E-12	5.245E-13	5.137E-14
U-238+D1	U-234	2.633E-10	1.149E-20	3.438E-20	7.969E-20	2.336E-19	6.349E-19	1.658E-18	2.552E-18	8.314E-19
U-238+D1	Th-230	2.633E-10	1.789E-25	1.250E-24	6.577E-24	5.794E-23	4.675E-22	4.358E-21	2.565E-20	8.177E-20
U-238+D1	Ra-226+D2	2.633E-10	4.070E-26	6.092E-25	7.076E-24	1.846E-22	4.307E-21	1.308E-19	2.214E-18	1.907E-17
U-238+D1	Pb-210+D1	2.633E-10	6.944E-31	2.137E-29	5.298E-28	3.910E-26	2.364E-24	1.695E-22	4.568E-21	4.801E-20
U-238+D1	ΣDSR(j)		1.420E-12	1.415E-12	1.406E-12	1.373E-12	1.285E-12	1.019E-12	5.245E-13	5.139E-14
U-238+D1	U-238+D1	3.789E-12	2.043E-14	2.037E-14	2.023E-14	1.977E-14	1.850E-14	1.466E-14	7.549E-15	7.394E-16
U-238+D1	U-234	3.789E-12	1.654E-22	4.948E-22	1.147E-21	3.362E-21	9.139E-21	2.387E-20	3.674E-20	1.197E-20
U-238+D1	Th-230	3.789E-12	2.575E-27	1.799E-26	9.467E-26	8.340E-25	6.729E-24	6.273E-23	3.692E-22	1.177E-21
U-238+D1	Ra-226+D2	3.789E-12	5.858E-28	8.769E-27	1.018E-25	2.657E-24	6.200E-23	1.883E-21	3.186E-20	2.745E-19
U-238+D1	Pb-210+D2	3.789E-12	2.533E-31	7.795E-30	1.933E-28	1.426E-26	8.623E-25	6.182E-23	1.666E-21	1.751E-20
U-238+D1	ΣDSR(j)		2.043E-14	2.037E-14	2.023E-14	1.977E-14	1.850E-14	1.466E-14	7.550E-15	7.397E-16
U-238+D1	U-238+D1	4.189E-08	2.259E-10	2.252E-10	2.237E-10	2.185E-10	2.045E-10	1.621E-10	8.346E-11	8.174E-12
U-238+D1	U-234	4.189E-08	1.829E-18	5.470E-18	1.268E-17	3.717E-17	1.010E-16	2.639E-16	4.061E-16	1.323E-16
U-238+D1	Th-230	4.189E-08	2.846E-23	1.989E-22	1.047E-21	9.220E-21	7.439E-20	6.934E-19	4.081E-18	1.301E-17
U-238+D1	Ra-226+D3	4.189E-08	1.830E-23	2.739E-22	3.181E-21	8.300E-20	1.937E-18	5.881E-17	9.953E-16	8.575E-15
U-238+D1	Pb-210+D	4.189E-08	5.459E-29	1.680E-27	4.165E-26	3.073E-24	1.858E-22	1.332E-20	3.591E-19	3.774E-18
U-238+D1	Po-210	4.189E-08	8.600E-30	4.388E-28	1.626E-26	1.651E-24	1.131E-22	8.509E-21	2.324E-19	2.453E-18
U-238+D1	ΣDSR(j)		2.259E-10	2.252E-10	2.237E-10	2.185E-10	2.045E-10	1.621E-10	8.346E-11	8.183E-12
U-238+D1	U-238+D1	5.530E-14	2.982E-16	2.972E-16	2.952E-16	2.885E-16	2.699E-16	2.140E-16	1.102E-16	1.079E-17
U-238+D1	U-234	5.530E-14	2.414E-24	7.221E-24	1.674E-23	4.906E-23	1.334E-22	3.483E-22	5.361E-22	1.746E-22
U-238+D1	Th-230	5.530E-14	3.757E-29	2.625E-28	1.382E-27	1.217E-26	9.819E-26	9.154E-25	5.387E-24	1.717E-23
U-238+D1	Ra-226+D3	5.530E-14	2.415E-29	3.616E-28	4.199E-27	1.096E-25	2.556E-24	7.763E-23	1.314E-21	1.132E-20
U-238+D1	Pb-210+D1	5.530E-14	1.459E-34	4.489E-33	1.113E-31	8.212E-30	4.965E-28	3.560E-26	9.594E-25	1.008E-23
U-238+D1	ΣDSR(j)		2.982E-16	2.972E-16	2.952E-16	2.885E-16	2.699E-16	2.140E-16	1.102E-16	1.080E-17
U-238+D1	U-238+D1	7.959E-16	4.292E-18	4.278E-18	4.250E-18	4.152E-18	3.885E-18	3.080E-18	1.586E-18	1.553E-19
U-238+D1	U-234	7.959E-16	3.475E-26	1.039E-25	2.409E-25	7.062E-25	1.920E-24	5.014E-24	7.716E-24	2.514E-24
U-238+D1	Th-230	7.959E-16	5.408E-31	3.778E-30	1.989E-29	1.752E-28	1.413E-27	1.318E-26	7.755E-26	2.472E-25
U-238+D1	Ra-226+D3	7.959E-16	3.477E-31	5.205E-30	6.045E-29	1.577E-27	3.680E-26	1.117E-24	1.891E-23	1.629E-22
U-238+D1	Pb-210+D2	7.959E-16	5.321E-35	1.637E-33	4.060E-32	2.996E-30	1.811E-28	1.299E-26	3.500E-25	3.679E-24
U-238+D1	ΣDSR(j)		4.292E-18	4.278E-18	4.250E-18	4.152E-18	3.885E-18	3.080E-18	1.586E-18	1.555E-19

Summary : RESRAD Recreator (Backpacker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.997E-07	1.077E-09	1.073E-09	1.066E-09	1.042E-09	9.747E-10	7.726E-10	3.978E-10	3.896E-11
U-238+D1	U-234	1.997E-07	8.717E-18	2.607E-17	6.044E-17	1.772E-16	4.816E-16	1.258E-15	1.936E-15	6.306E-16
U-238+D1	Th-230	1.997E-07	1.357E-22	9.479E-22	4.989E-21	4.395E-20	3.546E-19	3.305E-18	1.945E-17	6.202E-17
U-238+D1	Ra-226+D4	1.997E-07	1.382E-25	2.069E-24	2.403E-23	6.268E-22	1.463E-20	4.441E-19	7.517E-18	6.476E-17
U-238+D1	Pb-210+D	1.997E-07	2.602E-28	8.007E-27	1.985E-25	1.465E-23	8.857E-22	6.350E-20	1.712E-18	1.799E-17
U-238+D1	Po-210	1.997E-07	4.100E-29	2.091E-27	7.751E-26	7.868E-24	5.393E-22	4.056E-20	1.108E-18	1.169E-17
U-238+D1	ΣDSR(j)		1.077E-09	1.073E-09	1.066E-09	1.042E-09	9.747E-10	7.726E-10	3.978E-10	3.896E-11
U-238+D1	U-238+D1	2.636E-13	1.421E-15	1.417E-15	1.407E-15	1.375E-15	1.287E-15	1.020E-15	5.251E-16	5.143E-17
U-238+D1	U-234	2.636E-13	1.151E-23	3.442E-23	7.979E-23	2.339E-22	6.357E-22	1.660E-21	2.555E-21	8.324E-22
U-238+D1	Th-230	2.636E-13	1.791E-28	1.251E-27	6.585E-27	5.801E-26	4.681E-25	4.363E-24	2.568E-23	8.187E-23
U-238+D1	Ra-226+D4	2.636E-13	1.824E-31	2.731E-30	3.172E-29	8.274E-28	1.931E-26	5.863E-25	9.923E-24	8.549E-23
U-238+D1	Pb-210+D1	2.636E-13	6.953E-34	2.140E-32	5.304E-31	3.915E-29	2.367E-27	1.697E-25	4.573E-24	4.807E-23
U-238+D1	ΣDSR(j)		1.421E-15	1.417E-15	1.407E-15	1.375E-15	1.287E-15	1.020E-15	5.251E-16	5.143E-17
U-238+D1	U-238+D1	3.794E-15	2.046E-17	2.039E-17	2.026E-17	1.979E-17	1.852E-17	1.468E-17	7.559E-18	7.403E-19
U-238+D1	U-234	3.794E-15	1.656E-25	4.954E-25	1.148E-24	3.366E-24	9.150E-24	2.390E-23	3.678E-23	1.198E-23
U-238+D1	Th-230	3.794E-15	2.578E-30	1.801E-29	9.479E-29	8.350E-28	6.737E-27	6.280E-26	3.696E-25	1.178E-24
U-238+D1	Ra-226+D4	3.794E-15	2.626E-33	3.931E-32	4.565E-31	1.191E-29	2.779E-28	8.439E-27	1.428E-25	1.231E-24
U-238+D1	Pb-210+D2	3.794E-15	2.536E-34	7.805E-33	1.935E-31	1.428E-29	8.633E-28	6.190E-26	1.668E-24	1.754E-23
U-238+D1	ΣDSR(j)		2.046E-17	2.039E-17	2.026E-17	1.979E-17	1.852E-17	1.468E-17	7.559E-18	7.403E-19

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Radionuclide (i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	2.008E+04	1.744E+04	1.808E+04	2.274E+04	4.390E+04	4.388E+05	3.153E+08	*7.632E+13	
Po-210	8.941E+04	5.662E+05	2.271E+07	9.289E+12	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15	
Ra-226	3.193E+01	3.202E+01	3.219E+01	3.282E+01	3.469E+01	4.219E+01	7.396E+01	5.277E+02	
Th-230	5.027E+04	2.990E+04	1.655E+04	6.506E+03	2.436E+03	8.307E+02	3.610E+02	2.207E+02	
U-234	3.878E+05	3.891E+05	3.915E+05	3.996E+05	4.181E+05	4.210E+05	2.436E+05	9.177E+04	
U-238	2.045E+03	2.052E+03	2.066E+03	2.114E+03	2.259E+03	2.850E+03	5.536E+03	5.650E+04	

*At specific activity limit

Summary : RESRAD Recreator (Backpacker)

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Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Pb-210	1.000E+00	1.291 ± 0.003	6.901E-04	1.739E+04	5.977E-04	2.008E+04
Po-210	1.000E+00	0.000E+00	1.342E-04	8.941E+04	1.342E-04	8.941E+04
Ra-226	1.000E+00	0.000E+00	3.758E-01	3.193E+01	3.758E-01	3.193E+01
Th-230	1.000E+00	1.000E+03	5.438E-02	2.207E+02	2.387E-04	5.027E+04
U-234	1.000E+00	1.000E+03	1.308E-04	9.177E+04	3.094E-05	3.878E+05
U-238	1.000E+00	0.000E+00	5.868E-03	2.045E+03	5.868E-03	2.045E+03

Summary : RESRAD Recreator (Backpacker)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	4.411E-04	4.268E-04	3.996E-04	3.174E-04	1.644E-04	1.645E-05	2.290E-08	2.303E-18
Pb-210	Pb-210	1.320E-06	1.179E-09	1.140E-09	1.068E-09	8.482E-10	4.394E-10	4.397E-11	6.119E-14	6.154E-24
Pb-210	Ra-226	9.996E-01	6.914E-06	2.042E-05	4.601E-05	1.223E-04	2.564E-04	3.338E-04	2.001E-04	2.806E-05
Pb-210	Ra-226	2.100E-04	1.452E-09	4.288E-09	9.665E-09	2.569E-08	5.386E-08	7.011E-08	4.203E-08	5.893E-09
Pb-210	Ra-226	1.998E-04	1.382E-09	4.080E-09	9.195E-09	2.444E-08	5.124E-08	6.670E-08	3.999E-08	5.607E-09
Pb-210	Ra-226	4.196E-08	2.902E-13	8.570E-13	1.931E-12	5.134E-12	1.076E-11	1.401E-11	8.400E-12	1.178E-12
Pb-210	Ra-226	2.000E-07	1.383E-12	4.085E-12	9.206E-12	2.447E-11	5.130E-11	6.679E-11	4.004E-11	5.613E-12
Pb-210	Th-230	9.996E-01	1.001E-09	6.939E-09	3.585E-08	2.960E-07	2.010E-06	1.174E-05	3.472E-05	6.084E-05
Pb-210	Th-230	2.100E-04	2.103E-13	1.457E-12	7.530E-12	6.217E-11	4.222E-10	2.466E-09	7.292E-09	1.278E-08
Pb-210	Th-230	1.998E-04	2.001E-13	1.387E-12	7.164E-12	5.915E-11	4.017E-10	2.346E-09	6.938E-09	1.216E-08
Pb-210	Th-230	4.196E-08	4.203E-17	2.913E-16	1.505E-15	1.242E-14	8.438E-14	4.927E-13	1.457E-12	2.554E-12
Pb-210	Th-230	2.000E-07	2.004E-16	1.388E-15	7.173E-15	5.922E-14	4.022E-13	2.349E-12	6.947E-12	1.217E-11
Pb-210	U-234	9.996E-01	2.305E-15	3.428E-14	3.926E-13	9.746E-12	1.989E-10	4.121E-09	3.637E-08	1.433E-07
Pb-210	U-234	2.100E-04	4.841E-19	7.201E-18	8.247E-17	2.047E-15	4.178E-14	8.657E-13	7.640E-12	3.010E-11
Pb-210	U-234	1.998E-04	4.605E-19	6.851E-18	7.846E-17	1.948E-15	3.975E-14	8.236E-13	7.269E-12	2.864E-11
Pb-210	U-234	4.196E-08	9.674E-23	1.439E-21	1.648E-20	4.091E-19	8.350E-18	1.730E-16	1.527E-15	6.015E-15
Pb-210	U-234	2.000E-07	4.611E-22	6.859E-21	7.856E-20	1.950E-18	3.980E-17	8.246E-16	7.277E-15	2.867E-14
Pb-210	U-238	1.599E-03	2.084E-24	6.413E-23	1.590E-21	1.173E-19	7.094E-18	5.086E-16	1.371E-14	1.441E-13
Pb-210	U-238	3.359E-07	4.377E-28	1.347E-26	3.340E-25	2.465E-23	1.490E-21	1.068E-19	2.879E-18	3.027E-17
Pb-210	U-238	3.196E-07	4.165E-28	1.282E-26	3.178E-25	2.345E-23	1.418E-21	1.016E-19	2.740E-18	2.879E-17
Pb-210	U-238	6.713E-11	0.000E+00	2.670E-30	6.619E-29	4.925E-27	2.978E-25	2.135E-23	5.754E-22	6.048E-21
Pb-210	U-238	3.200E-10	0.000E+00	1.273E-29	3.181E-28	2.348E-26	1.419E-24	1.018E-22	2.743E-21	2.883E-20
Pb-210	U-238	9.980E-01	1.300E-21	4.002E-20	9.922E-19	7.322E-17	4.427E-15	3.174E-13	8.554E-12	8.991E-11
Pb-210	U-238	2.096E-04	2.732E-25	8.406E-24	2.084E-22	1.538E-20	9.298E-19	6.666E-17	1.797E-15	1.889E-14
Pb-210	U-238	1.994E-04	2.599E-25	7.997E-24	1.983E-22	1.463E-20	8.846E-19	6.342E-17	1.709E-15	1.797E-14
Pb-210	U-238	4.189E-08	5.414E-29	1.680E-27	4.165E-26	3.073E-24	1.858E-22	1.332E-20	3.591E-19	3.774E-18
Pb-210	U-238	1.997E-07	2.602E-28	8.007E-27	1.985E-25	1.465E-23	8.857E-22	6.350E-20	1.712E-18	1.799E-17
Pb-210	ΣDOSE(j)		4.480E-04	4.472E-04	4.457E-04	4.401E-04	4.230E-04	3.621E-04	2.350E-04	8.908E-05
Po-210	Pb-210	1.000E+00	1.566E-04	2.612E-04	2.641E-04	2.102E-04	1.089E-04	1.090E-05	1.516E-08	1.525E-18
Po-210	Po-210	1.000E+00	1.342E-04	2.119E-05	5.283E-07	1.292E-12	1.188E-28	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	1.851E-06	8.875E-06	2.550E-05	7.611E-05	1.652E-04	2.172E-04	1.303E-04	1.827E-05
Po-210	Ra-226	2.100E-04	3.889E-10	1.864E-09	5.356E-09	1.599E-08	3.469E-08	4.563E-08	2.738E-08	3.838E-09
Po-210	Ra-226	1.998E-04	3.700E-10	1.774E-09	5.096E-09	1.521E-08	3.301E-08	4.341E-08	2.605E-08	3.652E-09
Po-210	Ra-226	4.196E-08	7.772E-14	3.725E-13	1.070E-12	3.195E-12	6.933E-12	9.118E-12	5.471E-12	7.670E-13
Po-210	Ra-226	2.000E-07	3.704E-13	1.776E-12	5.102E-12	1.523E-11	3.305E-11	4.346E-11	2.608E-11	3.656E-12
Po-210	Th-230	9.996E-01	2.167E-10	2.430E-09	1.733E-08	1.746E-07	1.269E-06	7.584E-06	2.255E-05	3.957E-05
Po-210	Th-230	2.100E-04	4.552E-14	5.104E-13	3.640E-12	3.668E-11	2.665E-10	1.593E-09	4.736E-09	8.310E-09
Po-210	Th-230	1.998E-04	4.331E-14	4.856E-13	3.463E-12	3.490E-11	2.535E-10	1.515E-09	4.506E-09	7.907E-09
Po-210	Th-230	4.196E-08	9.097E-18	1.020E-16	7.275E-16	7.330E-15	5.325E-14	3.183E-13	9.465E-13	1.661E-12
Po-210	Th-230	2.000E-07	4.336E-17	4.862E-16	3.468E-15	3.494E-14	2.538E-13	1.517E-12	4.512E-12	7.916E-12
Po-210	U-234	9.996E-01	4.199E-16	1.021E-14	1.693E-13	5.479E-12	1.233E-10	2.647E-09	2.358E-08	9.317E-08
Po-210	U-234	2.100E-04	8.820E-20	2.145E-18	3.556E-17	1.151E-15	2.589E-14	5.560E-13	4.954E-12	1.957E-11
Po-210	U-234	1.998E-04	8.391E-20	2.040E-18	3.384E-17	1.095E-15	2.463E-14	5.290E-13	4.713E-12	1.862E-11
Po-210	U-234	4.196E-08	1.763E-23	4.286E-22	7.107E-21	2.300E-19	5.174E-18	1.111E-16	9.900E-16	3.911E-15
Po-210	U-234	2.000E-07	8.401E-23	2.043E-21	3.388E-20	1.096E-18	2.466E-17	5.297E-16	4.719E-15	1.864E-14
Po-210	U-238	1.599E-03	3.284E-25	1.675E-23	6.208E-22	6.302E-20	4.320E-18	3.249E-16	8.874E-15	9.365E-14
Po-210	U-238	3.359E-07	6.785E-29	3.518E-27	1.304E-25	1.324E-23	9.073E-22	6.824E-20	1.864E-18	1.967E-17
Po-210	U-238	3.196E-07	6.455E-29	3.348E-27	1.241E-25	1.259E-23	8.633E-22	6.492E-20	1.773E-18	1.871E-17

Summary : RESRAD Recreator (Backpacker)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	0.000E+00	0.000E+00	2.564E-29	2.645E-27	1.813E-25	1.364E-23	3.725E-22	3.931E-21
Po-210	U-238	3.200E-10	0.000E+00	3.297E-30	1.234E-28	1.261E-26	8.643E-25	6.500E-23	1.775E-21	1.874E-20
Po-210	U-238	9.980E-01	2.049E-22	1.045E-20	3.874E-19	3.932E-17	2.696E-15	2.027E-13	5.537E-12	5.844E-11
Po-210	U-238	2.096E-04	4.304E-26	2.196E-24	8.137E-23	8.260E-21	5.662E-19	4.258E-17	1.163E-15	1.227E-14
Po-210	U-238	1.994E-04	4.095E-26	2.089E-24	7.742E-23	7.858E-21	5.387E-19	4.051E-17	1.107E-15	1.168E-14
Po-210	U-238	4.189E-08	8.461E-30	4.388E-28	1.626E-26	1.651E-24	1.131E-22	8.509E-21	2.324E-19	2.453E-18
Po-210	U-238	1.997E-07	4.033E-29	2.091E-27	7.751E-26	7.868E-24	5.393E-22	4.056E-20	1.108E-18	1.169E-17
Po-210	ΣDOSE(j)		2.927E-04	2.913E-04	2.901E-04	2.865E-04	2.754E-04	2.358E-04	1.530E-04	5.796E-05
Pb-210	Pb-210	1.900E-08	4.299E-10	4.160E-10	3.895E-10	3.094E-10	1.603E-10	1.604E-11	2.232E-14	2.245E-24
Pb-210	Ra-226	1.899E-08	6.739E-12	1.990E-11	4.485E-11	1.192E-10	2.499E-10	3.254E-10	1.951E-10	2.735E-11
Pb-210	Ra-226	3.989E-12	1.416E-15	4.180E-15	9.421E-15	2.504E-14	5.250E-14	6.834E-14	4.097E-14	5.744E-15
Pb-210	Ra-226	3.795E-12	1.347E-15	3.977E-15	8.963E-15	2.383E-14	4.995E-14	6.502E-14	3.898E-14	5.465E-15
Pb-210	Ra-226	7.972E-16	2.829E-19	8.354E-19	1.883E-18	5.004E-18	1.049E-17	1.366E-17	8.188E-18	1.148E-18
Pb-210	Ra-226	3.800E-15	1.348E-18	3.982E-18	8.974E-18	2.385E-17	5.001E-17	6.510E-17	3.903E-17	5.472E-18
Pb-210	Th-230	1.899E-08	9.761E-16	6.764E-15	3.494E-14	2.885E-13	1.959E-12	1.144E-11	3.384E-11	5.931E-11
Pb-210	Th-230	3.989E-12	2.050E-19	1.421E-18	7.340E-18	6.060E-17	4.116E-16	2.403E-15	7.108E-15	1.246E-14
Pb-210	Th-230	3.795E-12	1.951E-19	1.352E-18	6.983E-18	5.765E-17	3.916E-16	2.287E-15	6.763E-15	1.185E-14
Pb-210	Th-230	7.972E-16	4.097E-23	2.839E-22	1.467E-21	1.211E-20	8.225E-20	4.803E-19	1.421E-18	2.489E-18
Pb-210	Th-230	3.800E-15	1.953E-22	1.353E-21	6.992E-21	5.772E-20	3.921E-19	2.289E-18	6.771E-18	1.187E-17
Pb-210	U-234	1.899E-08	2.246E-21	3.342E-20	3.827E-19	9.500E-18	1.939E-16	4.017E-15	3.545E-14	1.397E-13
Pb-210	U-234	3.989E-12	4.718E-25	7.019E-24	8.039E-23	1.995E-21	4.073E-20	8.438E-19	7.447E-18	2.934E-17
Pb-210	U-234	3.795E-12	4.489E-25	6.678E-24	7.648E-23	1.899E-21	3.875E-20	8.028E-19	7.085E-18	2.792E-17
Pb-210	U-234	7.972E-16	9.359E-29	1.402E-27	1.606E-26	3.988E-25	8.139E-24	1.686E-22	1.488E-21	5.864E-21
Pb-210	U-234	3.800E-15	4.494E-28	6.686E-27	7.657E-26	1.901E-24	3.880E-23	8.038E-22	7.094E-21	2.795E-20
Pb-210	U-238	3.039E-11	2.016E-30	6.205E-29	1.550E-27	1.144E-25	6.915E-24	4.958E-22	1.336E-20	1.405E-19
Pb-210	U-238	6.383E-15	0.000E+00	0.000E+00	0.000E+00	2.385E-29	1.452E-27	1.041E-25	2.807E-24	2.950E-23
Pb-210	U-238	6.073E-15	0.000E+00	0.000E+00	0.000E+00	2.269E-29	1.382E-27	9.907E-26	2.670E-24	2.807E-23
Pb-210	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.066E-29	5.608E-28	5.895E-27
Pb-210	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.373E-30	9.846E-29	2.673E-27	2.810E-26
Pb-210	U-238	1.896E-08	1.267E-27	3.901E-26	9.671E-25	7.137E-23	4.315E-21	3.094E-19	8.338E-18	8.764E-17
Pb-210	U-238	3.983E-12	0.000E+00	8.133E-30	2.031E-28	1.499E-26	9.063E-25	6.498E-23	1.751E-21	1.841E-20
Pb-210	U-238	3.789E-12	0.000E+00	7.738E-30	1.932E-28	1.426E-26	8.623E-25	6.182E-23	1.666E-21	1.751E-20
Pb-210	U-238	7.959E-16	0.000E+00	0.000E+00	0.000E+00	2.974E-30	1.811E-28	1.299E-26	3.500E-25	3.679E-24
Pb-210	U-238	3.794E-15	0.000E+00	0.000E+00	0.000E+00	1.417E-29	8.632E-28	6.190E-26	1.668E-24	1.754E-23
Pb-210	ΣDOSE(j)		4.367E-10	4.359E-10	4.344E-10	4.290E-10	4.123E-10	3.530E-10	2.291E-10	8.683E-11
Ra-226	Ra-226	9.996E-01	3.756E-01	3.745E-01	3.724E-01	3.652E-01	3.452E-01	2.836E-01	1.618E-01	2.268E-02
Ra-226	Ra-226	1.319E-06	4.957E-07	4.943E-07	4.916E-07	4.820E-07	4.557E-07	3.744E-07	2.136E-07	2.994E-08
Ra-226	Th-230	9.996E-01	8.139E-05	2.439E-04	5.674E-04	1.686E-03	4.762E-03	1.426E-02	3.301E-02	5.408E-02
Ra-226	Th-230	1.319E-06	1.074E-10	3.219E-10	7.490E-10	2.225E-09	6.285E-09	1.882E-08	4.357E-08	7.139E-08
Ra-226	Th-230	1.899E-08	1.546E-12	4.633E-12	1.078E-11	3.203E-11	9.047E-11	2.709E-10	6.271E-10	1.028E-09
Ra-226	U-234	9.996E-01	2.493E-10	1.742E-09	9.172E-09	8.089E-08	6.549E-07	6.176E-06	3.748E-05	1.289E-04
Ra-226	U-234	1.319E-06	3.291E-16	2.300E-15	1.211E-14	1.068E-13	8.644E-13	8.152E-12	4.947E-11	1.702E-10
Ra-226	U-234	1.899E-08	4.737E-18	3.310E-17	1.743E-16	1.537E-15	1.244E-14	1.173E-13	7.121E-13	2.449E-12
Ra-226	U-238	1.599E-03	2.815E-19	4.213E-18	4.893E-17	1.277E-15	2.979E-14	9.045E-13	1.531E-11	1.319E-10
Ra-226	U-238	2.111E-09	3.715E-25	5.562E-24	6.459E-23	1.685E-21	3.932E-20	1.194E-18	2.021E-17	1.741E-16
Ra-226	U-238	3.039E-11	5.347E-27	8.006E-26	9.298E-25	2.426E-23	5.660E-22	1.719E-20	2.909E-19	2.506E-18
Ra-226	U-238	9.980E-01	1.756E-16	2.629E-15	3.054E-14	7.966E-13	1.859E-11	5.644E-10	9.553E-09	8.230E-08

Summary : RESRAD Recreator (Backpacker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	2.318E-22	3.471E-21	4.031E-20	1.052E-18	2.454E-17	7.451E-16	1.261E-14	1.086E-13
Ra-226	U-238	1.896E-08	3.337E-24	4.995E-23	5.802E-22	1.514E-20	3.532E-19	1.072E-17	1.815E-16	1.564E-15
Ra-226	ΣDOSE(j)		3.756E-01	3.747E-01	3.730E-01	3.668E-01	3.500E-01	2.979E-01	1.948E-01	7.689E-02
Pb-210	Ra-226	1.319E-06	1.847E-11	5.456E-11	1.229E-10	3.268E-10	6.851E-10	8.919E-10	5.347E-10	7.496E-11
Pb-210	Ra-226	2.771E-10	3.880E-15	1.146E-14	2.582E-14	6.865E-14	1.439E-13	1.873E-13	1.123E-13	1.575E-14
Pb-210	Ra-226	2.637E-10	3.692E-15	1.090E-14	2.457E-14	6.531E-14	1.369E-13	1.782E-13	1.069E-13	1.498E-14
Pb-210	Ra-226	5.538E-14	7.755E-19	2.290E-18	5.161E-18	1.372E-17	2.876E-17	3.744E-17	2.244E-17	3.147E-18
Pb-210	Ra-226	2.640E-13	3.696E-18	1.092E-17	2.460E-17	6.539E-17	1.371E-16	1.785E-16	1.070E-16	1.500E-17
Pb-210	Th-230	1.319E-06	2.676E-15	1.854E-14	9.579E-14	7.909E-13	5.371E-12	3.137E-11	9.277E-11	1.626E-10
Pb-210	Th-230	2.771E-10	5.620E-19	3.894E-18	2.012E-17	1.661E-16	1.128E-15	6.588E-15	1.949E-14	3.415E-14
Pb-210	Th-230	2.637E-10	5.347E-19	3.705E-18	1.914E-17	1.580E-16	1.073E-15	6.268E-15	1.854E-14	3.249E-14
Pb-210	Th-230	5.538E-14	1.123E-22	7.783E-22	4.021E-21	3.320E-20	2.255E-19	1.317E-18	3.894E-18	6.824E-18
Pb-210	Th-230	2.640E-13	5.354E-22	3.710E-21	1.917E-20	1.582E-19	1.075E-18	6.276E-18	1.856E-17	3.253E-17
Pb-210	U-234	1.319E-06	6.158E-21	9.161E-20	1.049E-18	2.604E-17	5.315E-16	1.101E-14	9.719E-14	3.829E-13
Pb-210	U-234	2.771E-10	1.293E-24	1.924E-23	2.204E-22	5.470E-21	1.116E-19	2.313E-18	2.041E-17	8.043E-17
Pb-210	U-234	2.637E-10	1.231E-24	1.831E-23	2.097E-22	5.204E-21	1.062E-19	2.201E-18	1.942E-17	7.652E-17
Pb-210	U-234	5.538E-14	2.585E-28	3.845E-27	4.404E-26	1.093E-24	2.231E-23	4.622E-22	4.079E-21	1.607E-20
Pb-210	U-234	2.640E-13	1.232E-27	1.833E-26	2.099E-25	5.211E-24	1.063E-22	2.203E-21	1.945E-20	7.662E-20
Pb-210	U-238	2.111E-09	5.546E-30	1.707E-28	4.249E-27	3.135E-25	1.896E-23	1.359E-21	3.663E-20	3.850E-19
Pb-210	U-238	4.434E-13	0.000E+00	0.000E+00	0.000E+00	6.559E-29	3.982E-27	2.854E-25	7.694E-24	8.087E-23
Pb-210	U-238	4.219E-13	0.000E+00	0.000E+00	0.000E+00	6.240E-29	3.788E-27	2.716E-25	7.320E-24	7.694E-23
Pb-210	U-238	8.862E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.681E-29	1.538E-27	1.616E-26
Pb-210	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.079E-30	2.719E-28	7.329E-27	7.703E-26
Pb-210	U-238	1.317E-06	3.475E-27	1.069E-25	2.651E-24	1.956E-22	1.183E-20	8.480E-19	2.286E-17	2.402E-16
Pb-210	U-238	2.767E-10	0.000E+00	2.237E-29	5.569E-28	4.109E-26	2.484E-24	1.781E-22	4.801E-21	5.046E-20
Pb-210	U-238	2.633E-10	0.000E+00	2.128E-29	5.298E-28	3.910E-26	2.364E-24	1.695E-22	4.568E-21	4.801E-20
Pb-210	U-238	5.530E-14	0.000E+00	0.000E+00	0.000E+00	8.179E-30	4.965E-28	3.560E-26	9.594E-25	1.008E-23
Pb-210	U-238	2.636E-13	0.000E+00	0.000E+00	0.000E+00	3.899E-29	2.367E-27	1.697E-25	4.573E-24	4.807E-23
Pb-210	ΣDOSE(j)		1.848E-11	5.460E-11	1.231E-10	3.277E-10	6.908E-10	9.237E-10	6.278E-10	2.380E-10
Ra-226	Ra-226	1.899E-08	7.136E-09	7.116E-09	7.076E-09	6.938E-09	6.559E-09	5.389E-09	3.074E-09	4.309E-10
Ra-226	Ra-226	2.100E-04	2.054E-04	2.048E-04	2.037E-04	1.997E-04	1.888E-04	1.551E-04	8.848E-05	1.240E-05
Ra-226	ΣDOSE(j)		2.054E-04	2.048E-04	2.037E-04	1.997E-04	1.888E-04	1.551E-04	8.849E-05	1.240E-05
Ra-226	Ra-226	2.771E-10	2.711E-10	2.704E-10	2.688E-10	2.636E-10	2.492E-10	2.048E-10	1.168E-10	1.637E-11
Ra-226	Ra-226	3.989E-12	3.902E-12	3.891E-12	3.870E-12	3.794E-12	3.587E-12	2.947E-12	1.681E-12	2.357E-13
Ra-226	ΣDOSE(j)		2.750E-10	2.742E-10	2.727E-10	2.674E-10	2.528E-10	2.077E-10	1.185E-10	1.661E-11
Ra-226	Ra-226	1.998E-04	6.593E-05	6.574E-05	6.538E-05	6.410E-05	6.060E-05	4.979E-05	2.840E-05	3.981E-06
Ra-226	Ra-226	2.637E-10	8.703E-11	8.678E-11	8.630E-11	8.462E-11	8.000E-11	6.573E-11	3.749E-11	5.255E-12
Ra-226	Th-230	1.998E-04	1.429E-08	4.281E-08	9.961E-08	2.959E-07	8.359E-07	2.503E-06	5.794E-06	9.494E-06
Ra-226	Th-230	2.637E-10	1.886E-14	5.651E-14	1.315E-13	3.906E-13	1.103E-12	3.304E-12	7.648E-12	1.253E-11
Ra-226	Th-230	3.795E-12	2.715E-16	8.134E-16	1.893E-15	5.622E-15	1.588E-14	4.756E-14	1.101E-13	1.804E-13
Ra-226	U-234	1.998E-04	4.377E-14	3.058E-13	1.610E-12	1.420E-11	1.150E-10	1.084E-09	6.580E-09	2.263E-08
Ra-226	U-234	2.637E-10	5.777E-20	4.037E-19	2.125E-18	1.874E-17	1.518E-16	1.431E-15	8.685E-15	2.987E-14
Ra-226	U-234	3.795E-12	8.316E-22	5.811E-21	3.059E-20	2.698E-19	2.184E-18	2.060E-17	1.250E-16	4.299E-16
Ra-226	U-238	3.196E-07	4.941E-23	7.397E-22	8.590E-21	2.241E-19	5.229E-18	1.588E-16	2.688E-15	2.315E-14
Ra-226	U-238	4.219E-13	6.521E-29	9.761E-28	1.134E-26	2.958E-25	6.903E-24	2.096E-22	3.548E-21	3.056E-20

Summary : RESRAD Recreator (Backpacker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	0.000E+00	1.405E-29	1.632E-28	4.257E-27	9.936E-26	3.017E-24	5.106E-23	4.399E-22
Ra-226	U-238	1.994E-04	3.083E-20	4.615E-19	5.360E-18	1.398E-16	3.263E-15	9.909E-14	1.677E-12	1.445E-11
Ra-226	U-238	2.633E-10	4.070E-26	6.092E-25	7.076E-24	1.846E-22	4.307E-21	1.308E-19	2.214E-18	1.907E-17
Ra-226	U-238	3.789E-12	5.857E-28	8.769E-27	1.018E-25	2.657E-24	6.200E-23	1.883E-21	3.186E-20	2.745E-19
Ra-226	ΣDOSE(j)		6.594E-05	6.579E-05	6.548E-05	6.440E-05	6.144E-05	5.230E-05	3.420E-05	1.350E-05
Ra-226	Ra-226	3.795E-12	1.253E-12	1.249E-12	1.242E-12	1.218E-12	1.151E-12	9.461E-13	5.397E-13	7.565E-14
Ra-226	Ra-226	4.196E-08	3.913E-08	3.902E-08	3.880E-08	3.805E-08	3.597E-08	2.955E-08	1.686E-08	2.363E-09
Ra-226	ΣDOSE(j)		3.913E-08	3.902E-08	3.880E-08	3.805E-08	3.597E-08	2.955E-08	1.686E-08	2.363E-09
Ra-226	Ra-226	5.538E-14	5.165E-14	5.151E-14	5.122E-14	5.022E-14	4.748E-14	3.901E-14	2.225E-14	3.119E-15
Ra-226	Ra-226	7.972E-16	7.434E-16	7.414E-16	7.372E-16	7.229E-16	6.834E-16	5.615E-16	3.203E-16	4.490E-17
Ra-226	ΣDOSE(j)		5.239E-14	5.225E-14	5.195E-14	5.094E-14	4.816E-14	3.957E-14	2.257E-14	3.164E-15
Ra-226	Ra-226	2.000E-07	2.955E-10	2.947E-10	2.930E-10	2.873E-10	2.716E-10	2.232E-10	1.273E-10	1.785E-11
Ra-226	Ra-226	2.640E-13	3.901E-16	3.890E-16	3.868E-16	3.793E-16	3.586E-16	2.946E-16	1.681E-16	2.356E-17
Ra-226	Th-230	2.000E-07	6.404E-14	1.919E-13	4.465E-13	1.326E-12	3.747E-12	1.122E-11	2.597E-11	4.256E-11
Ra-226	Th-230	2.640E-13	8.453E-20	2.533E-19	5.894E-19	1.751E-18	4.946E-18	1.481E-17	3.428E-17	5.617E-17
Ra-226	Th-230	3.800E-15	1.217E-21	3.646E-21	8.483E-21	2.520E-20	7.119E-20	2.132E-19	4.934E-19	8.086E-19
Ra-226	U-234	2.000E-07	1.962E-19	1.371E-18	7.217E-18	6.365E-17	5.153E-16	4.860E-15	2.949E-14	1.014E-13
Ra-226	U-234	2.640E-13	2.590E-25	1.809E-24	9.527E-24	8.402E-23	6.802E-22	6.415E-21	3.893E-20	1.339E-19
Ra-226	U-234	3.800E-15	3.727E-27	2.605E-26	1.371E-25	1.209E-24	9.791E-24	9.233E-23	5.604E-22	1.927E-21
Ra-226	U-238	3.200E-10	2.206E-28	3.315E-27	3.850E-26	1.005E-24	2.344E-23	7.118E-22	1.205E-20	1.038E-19
Ra-226	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	1.260E-30	3.081E-29	9.395E-28	1.590E-26	1.370E-25
Ra-226	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.285E-29	2.279E-28	1.972E-27
Ra-226	U-238	1.997E-07	1.382E-25	2.069E-24	2.403E-23	6.268E-22	1.463E-20	4.441E-19	7.517E-18	6.476E-17
Ra-226	U-238	2.636E-13	0.000E+00	2.596E-30	3.158E-29	8.274E-28	1.931E-26	5.863E-25	9.923E-24	8.549E-23
Ra-226	U-238	3.794E-15	0.000E+00	0.000E+00	0.000E+00	1.132E-29	2.779E-28	8.439E-27	1.428E-25	1.231E-24
Ra-226	ΣDOSE(j)		2.956E-10	2.949E-10	2.935E-10	2.887E-10	2.754E-10	2.344E-10	1.533E-10	6.050E-11
Ra-226	Ra-226	3.800E-15	5.615E-18	5.599E-18	5.568E-18	5.459E-18	5.161E-18	4.241E-18	2.419E-18	3.391E-19
Th-230	Th-230	9.996E-01	1.572E-04	1.572E-04	1.572E-04	1.572E-04	1.572E-04	1.570E-04	1.567E-04	1.553E-04
Th-230	Th-230	1.319E-06	2.075E-10	2.075E-10	2.075E-10	2.075E-10	2.075E-10	2.073E-10	2.068E-10	2.051E-10
Th-230	U-234	9.996E-01	7.221E-10	2.163E-09	5.030E-09	1.492E-08	4.193E-08	1.234E-07	2.742E-07	4.158E-07
Th-230	U-234	1.319E-06	9.531E-16	2.855E-15	6.640E-15	1.969E-14	5.534E-14	1.630E-13	3.620E-13	5.489E-13
Th-230	U-234	1.899E-08	1.372E-17	4.110E-17	9.558E-17	2.834E-16	7.966E-16	2.346E-15	5.211E-15	7.901E-15
Th-230	U-234	2.100E-04	1.517E-13	4.543E-13	1.057E-12	3.133E-12	8.806E-12	2.593E-11	5.760E-11	8.734E-11
Th-230	U-234	2.771E-10	2.002E-19	5.997E-19	1.395E-18	4.136E-18	1.162E-17	3.423E-17	7.604E-17	1.153E-16
Th-230	U-234	3.989E-12	2.882E-21	8.632E-21	2.008E-20	5.953E-20	1.673E-19	4.927E-19	1.094E-18	1.660E-18
Th-230	U-234	1.998E-04	1.443E-13	4.322E-13	1.005E-12	2.981E-12	8.378E-12	2.467E-11	5.480E-11	8.310E-11
Th-230	U-234	2.637E-10	1.905E-19	5.706E-19	1.327E-18	3.935E-18	1.106E-17	3.256E-17	7.234E-17	1.097E-16
Th-230	U-234	3.795E-12	2.742E-21	8.213E-21	1.910E-20	5.664E-20	1.592E-19	4.687E-19	1.041E-18	1.579E-18
Th-230	U-234	4.196E-08	3.031E-17	9.079E-17	2.112E-16	6.261E-16	1.760E-15	5.182E-15	1.151E-14	1.745E-14
Th-230	U-234	5.538E-14	4.001E-23	1.198E-22	2.787E-22	8.265E-22	2.323E-21	6.840E-21	1.520E-20	2.304E-20
Th-230	U-234	7.972E-16	5.759E-25	1.725E-24	4.012E-24	1.190E-23	3.344E-23	9.845E-23	2.187E-22	3.316E-22
Th-230	U-234	2.000E-07	1.445E-16	4.328E-16	1.006E-15	2.985E-15	8.389E-15	2.470E-14	5.487E-14	8.320E-14
Th-230	U-234	2.640E-13	1.907E-22	5.713E-22	1.329E-21	3.940E-21	1.107E-20	3.260E-20	7.243E-20	1.098E-19
Th-230	U-234	3.800E-15	2.745E-24	8.223E-24	1.912E-23	5.671E-23	1.594E-22	4.693E-22	1.043E-21	1.581E-21

Summary : RESRAD Recreator (Backpacker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	1.087E-18	7.592E-18	3.996E-17	3.520E-16	2.840E-15	2.648E-14	1.558E-13	4.967E-13
Th-230	U-238	2.111E-09	1.434E-24	1.002E-23	5.275E-23	4.646E-22	3.749E-21	3.495E-20	2.057E-19	6.557E-19
Th-230	U-238	3.039E-11	2.065E-26	1.443E-25	7.592E-25	6.688E-24	5.396E-23	5.030E-22	2.961E-21	9.438E-21
Th-230	U-238	3.359E-07	2.283E-22	1.595E-21	8.393E-21	7.393E-20	5.965E-19	5.561E-18	3.273E-17	1.043E-16
Th-230	U-238	4.434E-13	3.013E-28	2.105E-27	1.108E-26	9.759E-26	7.874E-25	7.340E-24	4.320E-23	1.377E-22
Th-230	U-238	6.383E-15	4.337E-30	3.030E-29	1.595E-28	1.405E-27	1.133E-26	1.057E-25	6.219E-25	1.982E-24
Th-230	U-238	3.196E-07	2.172E-22	1.517E-21	7.985E-21	7.034E-20	5.676E-19	5.291E-18	3.114E-17	9.927E-17
Th-230	U-238	4.219E-13	2.867E-28	2.003E-27	1.054E-26	9.285E-26	7.492E-25	6.984E-24	4.110E-23	1.310E-22
Th-230	U-238	6.073E-15	4.126E-30	2.883E-29	1.517E-28	1.337E-27	1.078E-26	1.005E-25	5.916E-25	1.886E-24
Th-230	U-238	6.713E-11	4.561E-26	3.187E-25	1.677E-24	1.478E-23	1.192E-22	1.111E-21	6.541E-21	2.085E-20
Th-230	U-238	8.862E-17	0.000E+00	0.000E+00	0.000E+00	1.950E-29	1.574E-28	1.467E-27	8.634E-27	2.752E-26
Th-230	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.111E-29	1.243E-28	3.962E-28
Th-230	U-238	3.200E-10	2.174E-25	1.519E-24	7.995E-24	7.043E-23	5.682E-22	5.297E-21	3.118E-20	9.939E-20
Th-230	U-238	4.224E-16	0.000E+00	0.000E+00	1.055E-29	9.297E-29	7.501E-28	6.992E-27	4.115E-26	1.312E-25
Th-230	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.080E-29	1.006E-28	5.924E-28	1.888E-27
Th-230	U-238	9.980E-01	6.781E-16	4.738E-15	2.493E-14	2.196E-13	1.772E-12	1.652E-11	9.723E-11	3.100E-10
Th-230	U-238	1.317E-06	8.951E-22	6.254E-21	3.291E-20	2.899E-19	2.339E-18	2.181E-17	1.283E-16	4.092E-16
Th-230	U-238	1.896E-08	1.288E-23	9.001E-23	4.737E-22	4.173E-21	3.367E-20	3.139E-19	1.847E-18	5.889E-18
Th-230	U-238	2.096E-04	1.424E-19	9.951E-19	5.237E-18	4.614E-17	3.722E-16	3.470E-15	2.042E-14	6.511E-14
Th-230	U-238	2.767E-10	1.880E-25	1.314E-24	6.913E-24	6.090E-23	4.914E-22	4.580E-21	2.696E-20	8.594E-20
Th-230	U-238	3.983E-12	2.706E-27	1.891E-26	9.951E-26	8.766E-25	7.073E-24	6.593E-23	3.880E-22	1.237E-21
Th-230	U-238	1.994E-04	1.355E-19	9.468E-19	4.983E-18	4.389E-17	3.542E-16	3.301E-15	1.943E-14	6.194E-14
Th-230	U-238	2.633E-10	1.789E-25	1.250E-24	6.577E-24	5.794E-23	4.675E-22	4.358E-21	2.565E-20	8.177E-20
Th-230	U-238	3.789E-12	2.575E-27	1.799E-26	9.467E-26	8.340E-25	6.729E-24	6.273E-23	3.692E-22	1.177E-21
Th-230	U-238	4.189E-08	2.846E-23	1.989E-22	1.047E-21	9.220E-21	7.439E-20	6.934E-19	4.081E-18	1.301E-17
Th-230	U-238	5.530E-14	3.757E-29	2.625E-28	1.382E-27	1.217E-26	9.819E-26	9.154E-25	5.387E-24	1.717E-23
Th-230	U-238	7.959E-16	0.000E+00	2.801E-30	1.989E-29	1.752E-28	1.413E-27	1.318E-26	7.755E-26	2.472E-25
Th-230	U-238	1.997E-07	1.357E-22	9.479E-22	4.989E-21	4.395E-20	3.546E-19	3.305E-18	1.945E-17	6.202E-17
Th-230	U-238	2.636E-13	1.791E-28	1.251E-27	6.585E-27	5.801E-26	4.681E-25	4.363E-24	2.568E-23	8.187E-23
Th-230	U-238	3.794E-15	1.072E-30	1.801E-29	9.479E-29	8.350E-28	6.737E-27	6.280E-26	3.696E-25	1.178E-24
Th-230	ΣDOSE(j)		1.572E-04	1.572E-04	1.572E-04	1.572E-04	1.572E-04	1.572E-04	1.569E-04	1.558E-04
Th-230	Th-230	1.899E-08	2.987E-12	2.987E-12	2.987E-12	2.987E-12	2.986E-12	2.984E-12	2.976E-12	2.952E-12
Th-230	Th-230	2.100E-04	3.302E-08	3.302E-08	3.302E-08	3.302E-08	3.301E-08	3.298E-08	3.290E-08	3.263E-08
Th-230	ΣDOSE(j)		3.303E-08	3.303E-08	3.302E-08	3.302E-08	3.301E-08	3.299E-08	3.291E-08	3.263E-08
Ra-226	Th-230	2.100E-04	4.451E-08	1.334E-07	3.103E-07	9.219E-07	2.604E-06	7.798E-06	1.805E-05	2.958E-05
Ra-226	Th-230	3.989E-12	8.457E-16	2.534E-15	5.896E-15	1.752E-14	4.948E-14	1.482E-13	3.430E-13	5.620E-13
Ra-226	U-234	2.100E-04	1.363E-13	9.528E-13	5.016E-12	4.424E-11	3.581E-10	3.378E-09	2.050E-08	7.050E-08
Ra-226	U-234	2.771E-10	1.800E-19	1.258E-18	6.621E-18	5.840E-17	4.728E-16	4.458E-15	2.706E-14	9.306E-14
Ra-226	U-234	3.989E-12	2.591E-21	1.810E-20	9.530E-20	8.405E-19	6.805E-18	6.417E-17	3.895E-16	1.339E-15
Ra-226	U-238	3.359E-07	1.539E-22	2.304E-21	2.676E-20	6.982E-19	1.629E-17	4.947E-16	8.373E-15	7.213E-14
Ra-226	U-238	4.434E-13	2.032E-28	3.041E-27	3.533E-26	9.216E-25	2.150E-23	6.530E-22	1.105E-20	9.522E-20
Ra-226	U-238	6.383E-15	2.924E-30	4.378E-29	5.084E-28	1.326E-26	3.095E-25	9.399E-24	1.591E-22	1.371E-21
Ra-226	U-238	2.096E-04	9.605E-20	1.438E-18	1.670E-17	4.357E-16	1.017E-14	3.087E-13	5.225E-12	4.501E-11
Ra-226	U-238	2.767E-10	1.268E-25	1.898E-24	2.204E-23	5.751E-22	1.342E-20	4.075E-19	6.896E-18	5.942E-17
Ra-226	U-238	3.983E-12	1.825E-27	2.732E-26	3.173E-25	8.277E-24	1.932E-22	5.865E-21	9.927E-20	8.552E-19
Ra-226	ΣDOSE(j)		4.451E-08	1.334E-07	3.103E-07	9.219E-07	2.604E-06	7.801E-06	1.807E-05	2.965E-05

Summary : RESRAD Recreator (Backpacker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	4.359E-14	4.359E-14	4.359E-14	4.359E-14	4.357E-14	4.354E-14	4.343E-14	4.307E-14
Th-230	Th-230	3.989E-12	6.274E-16	6.274E-16	6.274E-16	6.274E-16	6.272E-16	6.267E-16	6.252E-16	6.200E-16
Th-230	ΣDOSE(j)		4.422E-14	4.422E-14	4.422E-14	4.421E-14	4.420E-14	4.417E-14	4.406E-14	4.369E-14
Ra-226	Th-230	2.771E-10	5.875E-14	1.760E-13	4.096E-13	1.217E-12	3.437E-12	1.029E-11	2.383E-11	3.904E-11
Th-230	Th-230	1.998E-04	3.142E-08	3.142E-08	3.142E-08	3.142E-08	3.141E-08	3.138E-08	3.131E-08	3.104E-08
Th-230	Th-230	2.637E-10	4.147E-14	4.147E-14	4.147E-14	4.147E-14	4.146E-14	4.142E-14	4.132E-14	4.098E-14
Th-230	ΣDOSE(j)		3.142E-08	3.142E-08	3.142E-08	3.142E-08	3.141E-08	3.138E-08	3.131E-08	3.104E-08
Th-230	Th-230	3.795E-12	5.970E-16	5.970E-16	5.969E-16	5.969E-16	5.967E-16	5.962E-16	5.948E-16	5.899E-16
Th-230	Th-230	4.196E-08	6.599E-12	6.599E-12	6.599E-12	6.599E-12	6.597E-12	6.591E-12	6.576E-12	6.521E-12
Th-230	ΣDOSE(j)		6.600E-12	6.600E-12	6.600E-12	6.599E-12	6.598E-12	6.592E-12	6.576E-12	6.521E-12
Ra-226	Th-230	4.196E-08	8.480E-12	2.541E-11	5.912E-11	1.756E-10	4.961E-10	1.486E-09	3.439E-09	5.635E-09
Ra-226	Th-230	7.972E-16	1.611E-19	4.827E-19	1.123E-18	3.337E-18	9.426E-18	2.823E-17	6.534E-17	1.071E-16
Ra-226	U-234	4.196E-08	2.598E-17	1.815E-16	9.556E-16	8.428E-15	6.823E-14	6.435E-13	3.905E-12	1.343E-11
Ra-226	U-234	5.538E-14	3.429E-23	2.396E-22	1.261E-21	1.112E-20	9.006E-20	8.494E-19	5.155E-18	1.773E-17
Ra-226	U-234	7.972E-16	4.935E-25	3.449E-24	1.816E-23	1.601E-22	1.296E-21	1.223E-20	7.420E-20	2.552E-19
Ra-226	U-238	6.713E-11	2.933E-26	4.390E-25	5.098E-24	1.330E-22	3.104E-21	9.424E-20	1.595E-18	1.374E-17
Ra-226	U-238	8.862E-17	0.000E+00	0.000E+00	6.729E-30	1.756E-28	4.097E-27	1.244E-25	2.106E-24	1.814E-23
Ra-226	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	2.527E-30	5.897E-29	1.790E-27	3.031E-26	2.611E-25
Ra-226	U-238	4.189E-08	1.830E-23	2.739E-22	3.181E-21	8.300E-20	1.937E-18	5.881E-17	9.953E-16	8.575E-15
Ra-226	U-238	5.530E-14	2.415E-29	3.616E-28	4.199E-27	1.096E-25	2.556E-24	7.763E-23	1.314E-21	1.132E-20
Ra-226	U-238	7.959E-16	0.000E+00	5.204E-30	6.044E-29	1.577E-27	3.680E-26	1.117E-24	1.891E-23	1.629E-22
Ra-226	ΣDOSE(j)		8.480E-12	2.541E-11	5.912E-11	1.756E-10	4.962E-10	1.486E-09	3.443E-09	5.648E-09
Th-230	Th-230	5.538E-14	8.711E-18	8.711E-18	8.711E-18	8.710E-18	8.708E-18	8.701E-18	8.680E-18	8.607E-18
Th-230	Th-230	7.972E-16	1.254E-19	1.254E-19	1.254E-19	1.254E-19	1.253E-19	1.252E-19	1.249E-19	1.239E-19
Th-230	ΣDOSE(j)		8.837E-18	8.836E-18	8.836E-18	8.835E-18	8.833E-18	8.826E-18	8.805E-18	8.731E-18
Ra-226	Th-230	5.538E-14	1.119E-17	3.354E-17	7.804E-17	2.318E-16	6.549E-16	1.961E-15	4.539E-15	7.438E-15
Th-230	Th-230	2.000E-07	3.146E-11	3.146E-11	3.146E-11	3.145E-11	3.145E-11	3.142E-11	3.134E-11	3.108E-11
Th-230	Th-230	2.640E-13	4.152E-17	4.152E-17	4.152E-17	4.152E-17	4.151E-17	4.147E-17	4.137E-17	4.103E-17
Th-230	ΣDOSE(j)		3.146E-11	3.146E-11	3.146E-11	3.145E-11	3.145E-11	3.142E-11	3.134E-11	3.108E-11
Th-230	Th-230	3.800E-15	5.977E-19	5.977E-19	5.977E-19	5.976E-19	5.975E-19	5.970E-19	5.955E-19	5.906E-19
U-234	U-234	9.996E-01	3.093E-05	3.083E-05	3.062E-05	2.992E-05	2.800E-05	2.219E-05	1.142E-05	1.116E-06
U-234	U-234	1.319E-06	4.083E-11	4.069E-11	4.042E-11	3.949E-11	3.695E-11	2.929E-11	1.507E-11	1.473E-12
U-234	U-238	1.599E-03	6.982E-14	2.088E-13	4.841E-13	1.419E-12	3.857E-12	1.007E-11	1.551E-11	5.051E-12
U-234	U-238	2.111E-09	9.216E-20	2.757E-19	6.391E-19	1.873E-18	5.092E-18	1.330E-17	2.047E-17	6.667E-18
U-234	U-238	3.039E-11	1.327E-21	3.968E-21	9.199E-21	2.696E-20	7.329E-20	1.914E-19	2.946E-19	9.597E-20
U-234	U-238	3.359E-07	1.467E-17	4.387E-17	1.017E-16	2.981E-16	8.102E-16	2.116E-15	3.257E-15	1.061E-15
U-234	U-238	4.434E-13	1.936E-23	5.790E-23	1.342E-22	3.935E-22	1.069E-21	2.793E-21	4.299E-21	1.400E-21
U-234	U-238	6.383E-15	2.786E-25	8.335E-25	1.932E-24	5.663E-24	1.539E-23	4.020E-23	6.188E-23	2.016E-23
U-234	U-238	3.196E-07	1.395E-17	4.174E-17	9.675E-17	2.836E-16	7.709E-16	2.013E-15	3.099E-15	1.009E-15
U-234	U-238	4.219E-13	1.842E-23	5.509E-23	1.277E-22	3.743E-22	1.018E-21	2.657E-21	4.090E-21	1.332E-21

Summary : RESRAD Recreator (Backpacker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	2.651E-25	7.930E-25	1.838E-24	5.388E-24	1.465E-23	3.825E-23	5.887E-23	1.918E-23
U-234	U-238	6.713E-11	2.931E-21	8.766E-21	2.032E-20	5.957E-20	1.619E-19	4.229E-19	6.508E-19	2.120E-19
U-234	U-238	8.862E-17	3.869E-27	1.157E-26	2.682E-26	7.863E-26	2.137E-25	5.582E-25	8.591E-25	2.799E-25
U-234	U-238	1.276E-18	5.568E-29	1.666E-28	3.861E-28	1.132E-27	3.076E-27	8.035E-27	1.237E-26	4.028E-27
U-234	U-238	3.200E-10	1.397E-20	4.179E-20	9.687E-20	2.839E-19	7.718E-19	2.016E-18	3.102E-18	1.011E-18
U-234	U-238	4.224E-16	1.844E-26	5.516E-26	1.279E-25	3.748E-25	1.019E-24	2.661E-24	4.095E-24	1.334E-24
U-234	U-238	6.080E-18	2.654E-28	7.939E-28	1.840E-27	5.395E-27	1.466E-26	3.830E-26	5.894E-26	1.920E-26
U-234	U-238	9.980E-01	4.357E-11	1.303E-10	3.021E-10	8.855E-10	2.407E-09	6.286E-09	9.675E-09	3.152E-09
U-234	U-238	1.317E-06	5.751E-17	1.720E-16	3.988E-16	1.169E-15	3.177E-15	8.298E-15	1.277E-14	4.160E-15
U-234	U-238	1.896E-08	8.278E-19	2.476E-18	5.740E-18	1.682E-17	4.573E-17	1.194E-16	1.838E-16	5.989E-17
U-234	U-238	2.096E-04	9.151E-15	2.737E-14	6.345E-14	1.860E-13	5.056E-13	1.320E-12	2.032E-12	6.620E-13
U-234	U-238	2.767E-10	1.208E-20	3.613E-20	8.376E-20	2.455E-19	6.674E-19	1.743E-18	2.683E-18	8.739E-19
U-234	U-238	3.983E-12	1.739E-22	5.201E-22	1.206E-21	3.534E-21	9.606E-21	2.509E-20	3.861E-20	1.258E-20
U-234	U-238	1.994E-04	8.707E-15	2.604E-14	6.037E-14	1.770E-13	4.810E-13	1.256E-12	1.933E-12	6.299E-13
U-234	U-238	2.633E-10	1.149E-20	3.438E-20	7.969E-20	2.336E-19	6.349E-19	1.658E-18	2.552E-18	8.314E-19
U-234	U-238	3.789E-12	1.654E-22	4.948E-22	1.147E-21	3.362E-21	9.139E-21	2.387E-20	3.674E-20	1.197E-20
U-234	U-238	4.189E-08	1.829E-18	5.470E-18	1.268E-17	3.717E-17	1.010E-16	2.639E-16	4.061E-16	1.323E-16
U-234	U-238	5.530E-14	2.414E-24	7.221E-24	1.674E-23	4.906E-23	1.334E-22	3.483E-22	5.361E-22	1.746E-22
U-234	U-238	7.959E-16	3.475E-26	1.039E-25	2.409E-25	7.062E-25	1.920E-24	5.014E-24	7.716E-24	2.514E-24
U-234	U-238	1.997E-07	8.717E-18	2.607E-17	6.044E-17	1.772E-16	4.816E-16	1.258E-15	1.936E-15	6.306E-16
U-234	U-238	2.636E-13	1.151E-23	3.442E-23	7.979E-23	2.339E-22	6.357E-22	1.660E-21	2.555E-21	8.324E-22
U-234	U-238	3.794E-15	1.656E-25	4.954E-25	1.148E-24	3.366E-24	9.150E-24	2.390E-23	3.678E-23	1.198E-23
U-234	ΣDOSE(j)		3.093E-05	3.083E-05	3.062E-05	2.992E-05	2.800E-05	2.219E-05	1.143E-05	1.119E-06
U-234	U-234	1.899E-08	5.876E-13	5.857E-13	5.818E-13	5.684E-13	5.319E-13	4.215E-13	2.169E-13	2.120E-14
U-234	U-234	2.100E-04	6.496E-09	6.475E-09	6.432E-09	6.284E-09	5.880E-09	4.660E-09	2.398E-09	2.344E-10
U-234	ΣDOSE(j)		6.497E-09	6.475E-09	6.433E-09	6.285E-09	5.881E-09	4.661E-09	2.398E-09	2.344E-10
U-234	U-234	2.771E-10	8.575E-15	8.547E-15	8.490E-15	8.295E-15	7.762E-15	6.151E-15	3.165E-15	3.094E-16
U-234	U-234	3.989E-12	1.234E-16	1.230E-16	1.222E-16	1.194E-16	1.117E-16	8.854E-17	4.556E-17	4.454E-18
U-234	ΣDOSE(j)		8.699E-15	8.670E-15	8.612E-15	8.415E-15	7.874E-15	6.240E-15	3.211E-15	3.139E-16
U-234	U-234	1.998E-04	6.181E-09	6.160E-09	6.120E-09	5.979E-09	5.595E-09	4.434E-09	2.282E-09	2.230E-10
U-234	U-234	2.637E-10	8.159E-15	8.132E-15	8.078E-15	7.892E-15	7.385E-15	5.853E-15	3.012E-15	2.944E-16
U-234	ΣDOSE(j)		6.181E-09	6.160E-09	6.120E-09	5.979E-09	5.595E-09	4.434E-09	2.282E-09	2.230E-10
U-234	U-234	3.795E-12	1.174E-16	1.170E-16	1.163E-16	1.136E-16	1.063E-16	8.424E-17	4.335E-17	4.237E-18
U-234	U-234	4.196E-08	1.298E-12	1.294E-12	1.285E-12	1.256E-12	1.175E-12	9.313E-13	4.792E-13	4.684E-14
U-234	ΣDOSE(j)		1.298E-12	1.294E-12	1.285E-12	1.256E-12	1.175E-12	9.314E-13	4.793E-13	4.685E-14
U-234	U-234	5.538E-14	1.714E-18	1.708E-18	1.697E-18	1.658E-18	1.551E-18	1.229E-18	6.326E-19	6.183E-20
U-234	U-234	7.972E-16	2.467E-20	2.458E-20	2.442E-20	2.386E-20	2.233E-20	1.769E-20	9.105E-21	8.900E-22
U-234	ΣDOSE(j)		1.738E-18	1.733E-18	1.721E-18	1.682E-18	1.573E-18	1.247E-18	6.417E-19	6.272E-20
U-234	U-234	2.000E-07	6.188E-12	6.168E-12	6.127E-12	5.986E-12	5.601E-12	4.439E-12	2.284E-12	2.233E-13
U-234	U-234	2.640E-13	8.169E-18	8.141E-18	8.088E-18	7.902E-18	7.394E-18	5.860E-18	3.015E-18	2.947E-19
U-234	ΣDOSE(j)		6.188E-12	6.168E-12	6.127E-12	5.986E-12	5.601E-12	4.439E-12	2.284E-12	2.233E-13
U-234	U-234	3.800E-15	1.176E-19	1.172E-19	1.164E-19	1.137E-19	1.064E-19	8.434E-20	4.340E-20	4.242E-21

Summary : RESRAD Recreator (Backpacker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	1.206E-11	1.202E-11	1.194E-11	1.166E-11	1.091E-11	8.652E-12	4.455E-12	4.363E-13
U-238	U-238	1.599E-03	4.834E-04	4.818E-04	4.786E-04	4.676E-04	4.376E-04	3.469E-04	1.786E-04	1.749E-05
U-238	ΣDOSE(j)		4.834E-04	4.818E-04	4.786E-04	4.676E-04	4.376E-04	3.469E-04	1.786E-04	1.749E-05
U-238	U-238	2.111E-09	6.381E-10	6.360E-10	6.318E-10	6.173E-10	5.776E-10	4.579E-10	2.357E-10	2.309E-11
U-238	U-238	3.039E-11	9.185E-12	9.154E-12	9.094E-12	8.885E-12	8.314E-12	6.590E-12	3.393E-12	3.323E-13
U-238	ΣDOSE(j)		6.473E-10	6.451E-10	6.409E-10	6.261E-10	5.859E-10	4.645E-10	2.391E-10	2.342E-11
U-238	U-238	3.359E-07	1.015E-07	1.012E-07	1.005E-07	9.822E-08	9.191E-08	7.286E-08	3.751E-08	3.674E-09
U-238	U-238	4.434E-13	1.340E-13	1.336E-13	1.327E-13	1.297E-13	1.213E-13	9.617E-14	4.952E-14	4.850E-15
U-238	ΣDOSE(j)		1.015E-07	1.012E-07	1.005E-07	9.822E-08	9.191E-08	7.286E-08	3.751E-08	3.674E-09
U-238	U-238	6.383E-15	1.929E-15	1.923E-15	1.910E-15	1.866E-15	1.746E-15	1.384E-15	7.127E-16	6.981E-17
U-238	U-238	3.196E-07	9.660E-08	9.628E-08	9.565E-08	9.345E-08	8.745E-08	6.932E-08	3.569E-08	3.495E-09
U-238	ΣDOSE(j)		9.660E-08	9.628E-08	9.565E-08	9.345E-08	8.745E-08	6.932E-08	3.569E-08	3.495E-09
U-238	U-238	4.219E-13	1.275E-13	1.271E-13	1.263E-13	1.234E-13	1.154E-13	9.150E-14	4.711E-14	4.614E-15
U-238	U-238	6.073E-15	1.835E-15	1.829E-15	1.817E-15	1.776E-15	1.662E-15	1.317E-15	6.781E-16	6.641E-17
U-238	ΣDOSE(j)		1.294E-13	1.289E-13	1.281E-13	1.251E-13	1.171E-13	9.282E-14	4.779E-14	4.680E-15
U-238	U-238	6.713E-11	2.029E-11	2.022E-11	2.009E-11	1.963E-11	1.837E-11	1.456E-11	7.496E-12	7.342E-13
U-238	U-238	8.862E-17	2.678E-17	2.670E-17	2.652E-17	2.591E-17	2.425E-17	1.922E-17	9.895E-18	9.692E-19
U-238	ΣDOSE(j)		2.029E-11	2.022E-11	2.009E-11	1.963E-11	1.837E-11	1.456E-11	7.497E-12	7.342E-13
U-238	U-238	1.276E-18	3.855E-19	3.843E-19	3.817E-19	3.729E-19	3.490E-19	2.766E-19	1.424E-19	1.395E-20
U-238	U-238	3.200E-10	9.672E-11	9.640E-11	9.576E-11	9.356E-11	8.755E-11	6.940E-11	3.573E-11	3.500E-12
U-238	ΣDOSE(j)		9.672E-11	9.640E-11	9.576E-11	9.356E-11	8.755E-11	6.940E-11	3.573E-11	3.500E-12
U-238	U-238	4.224E-16	1.277E-16	1.272E-16	1.264E-16	1.235E-16	1.156E-16	9.161E-17	4.717E-17	4.620E-18
U-238	U-238	6.080E-18	1.838E-18	1.832E-18	1.819E-18	1.778E-18	1.664E-18	1.319E-18	6.789E-19	6.649E-20
U-238	ΣDOSE(j)		1.295E-16	1.291E-16	1.282E-16	1.253E-16	1.172E-16	9.293E-17	4.785E-17	4.686E-18
U-238	U-238	9.980E-01	5.382E-03	5.364E-03	5.328E-03	5.206E-03	4.872E-03	3.862E-03	1.988E-03	1.947E-04
U-238	U-238	1.317E-06	7.104E-09	7.080E-09	7.034E-09	6.872E-09	6.431E-09	5.097E-09	2.625E-09	2.570E-10
U-238	ΣDOSE(j)		5.382E-03	5.364E-03	5.328E-03	5.206E-03	4.872E-03	3.862E-03	1.988E-03	1.947E-04
U-238	U-238	1.896E-08	1.023E-10	1.019E-10	1.012E-10	9.891E-11	9.256E-11	7.337E-11	3.778E-11	3.700E-12
U-238	U-238	2.096E-04	1.130E-06	1.127E-06	1.119E-06	1.093E-06	1.023E-06	8.111E-07	4.176E-07	4.090E-08
U-238	ΣDOSE(j)		1.131E-06	1.127E-06	1.119E-06	1.094E-06	1.023E-06	8.112E-07	4.177E-07	4.091E-08
U-238	U-238	2.767E-10	1.492E-12	1.487E-12	1.477E-12	1.443E-12	1.351E-12	1.071E-12	5.513E-13	5.399E-14
U-238	U-238	3.983E-12	2.148E-14	2.141E-14	2.126E-14	2.078E-14	1.944E-14	1.541E-14	7.935E-15	7.771E-16
U-238	ΣDOSE(j)		1.514E-12	1.509E-12	1.499E-12	1.464E-12	1.370E-12	1.086E-12	5.592E-13	5.477E-14
U-238	U-238	1.994E-04	1.075E-06	1.072E-06	1.065E-06	1.040E-06	9.736E-07	7.717E-07	3.973E-07	3.892E-08
U-238	U-238	2.633E-10	1.420E-12	1.415E-12	1.406E-12	1.373E-12	1.285E-12	1.019E-12	5.245E-13	5.137E-14
U-238	ΣDOSE(j)		1.075E-06	1.072E-06	1.065E-06	1.040E-06	9.736E-07	7.717E-07	3.973E-07	3.892E-08
U-238	U-238	3.789E-12	2.043E-14	2.037E-14	2.023E-14	1.977E-14	1.850E-14	1.466E-14	7.549E-15	7.394E-16

Summary : RESRAD Recreator (Backpacker)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	2.259E-10	2.252E-10	2.237E-10	2.185E-10	2.045E-10	1.621E-10	8.346E-11	8.174E-12
U-238	ΣDOSE(j)		2.259E-10	2.252E-10	2.237E-10	2.185E-10	2.045E-10	1.621E-10	8.347E-11	8.175E-12
U-238	U-238	5.530E-14	2.982E-16	2.972E-16	2.952E-16	2.885E-16	2.699E-16	2.140E-16	1.102E-16	1.079E-17
U-238	U-238	7.959E-16	4.292E-18	4.278E-18	4.250E-18	4.152E-18	3.885E-18	3.080E-18	1.586E-18	1.553E-19
U-238	ΣDOSE(j)		3.025E-16	3.015E-16	2.995E-16	2.926E-16	2.738E-16	2.170E-16	1.118E-16	1.094E-17
U-238	U-238	1.997E-07	1.077E-09	1.073E-09	1.066E-09	1.042E-09	9.747E-10	7.726E-10	3.978E-10	3.896E-11
U-238	U-238	2.636E-13	1.421E-15	1.417E-15	1.407E-15	1.375E-15	1.287E-15	1.020E-15	5.251E-16	5.143E-17
U-238	ΣDOSE(j)		1.077E-09	1.073E-09	1.066E-09	1.042E-09	9.747E-10	7.726E-10	3.978E-10	3.896E-11
U-238	U-238	3.794E-15	2.046E-17	2.039E-17	2.026E-17	1.979E-17	1.852E-17	1.468E-17	7.559E-18	7.403E-19

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Recreator (Backpacker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	1.000E+00	9.676E-01	9.061E-01	7.197E-01	3.728E-01	3.731E-02	5.192E-05	5.222E-15
Pb-210	Pb-210	1.320E-06	1.320E-06	1.277E-06	1.196E-06	9.501E-07	4.922E-07	4.924E-08	6.854E-11	6.893E-21
Pb-210	Ra-226	9.996E-01	0.000E+00	3.066E-02	8.878E-02	2.621E-01	5.669E-01	7.450E-01	4.470E-01	6.266E-02
Pb-210	Ra-226	2.100E-04	0.000E+00	6.440E-06	1.865E-05	5.505E-05	1.191E-04	1.565E-04	9.388E-05	1.316E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	6.127E-06	1.774E-05	5.237E-05	1.133E-04	1.489E-04	8.932E-05	1.252E-05
Pb-210	Ra-226	4.196E-08	0.000E+00	1.287E-09	3.727E-09	1.100E-08	2.380E-08	3.127E-08	1.876E-08	2.630E-09
Pb-210	Ra-226	2.000E-07	0.000E+00	6.134E-09	1.776E-08	5.244E-08	1.134E-07	1.491E-07	8.943E-08	1.254E-08
Pb-210	Th-230	9.996E-01	0.000E+00	6.681E-06	5.872E-05	6.018E-04	4.360E-03	2.602E-02	7.734E-02	1.357E-01
Pb-210	Th-230	2.100E-04	0.000E+00	1.403E-09	1.233E-08	1.264E-07	9.158E-07	5.466E-06	1.624E-05	2.850E-05
Pb-210	Th-230	1.998E-04	0.000E+00	1.335E-09	1.174E-08	1.203E-07	8.713E-07	5.200E-06	1.546E-05	2.712E-05
Pb-210	Th-230	4.196E-08	0.000E+00	2.804E-13	2.465E-12	2.526E-11	1.830E-10	1.092E-09	3.246E-09	5.696E-09
Pb-210	Th-230	2.000E-07	0.000E+00	1.337E-12	1.175E-11	1.204E-10	8.724E-10	5.206E-09	1.547E-08	2.715E-08
Pb-210	U-234	9.996E-01	0.000E+00	2.052E-11	5.434E-10	1.883E-08	4.240E-07	9.087E-06	8.090E-05	3.195E-04
Pb-210	U-234	2.100E-04	0.000E+00	4.310E-15	1.141E-13	3.955E-12	8.905E-11	1.909E-09	1.699E-08	6.712E-08
Pb-210	U-234	1.998E-04	0.000E+00	4.101E-15	1.086E-13	3.763E-12	8.473E-11	1.816E-09	1.617E-08	6.386E-08
Pb-210	U-234	4.196E-08	0.000E+00	8.614E-19	2.281E-17	7.903E-16	1.780E-14	3.814E-13	3.396E-12	1.341E-11
Pb-210	U-234	2.000E-07	0.000E+00	4.106E-18	1.087E-16	3.767E-15	8.483E-14	1.818E-12	1.619E-11	6.394E-11
Pb-210	U-238	1.599E-03	0.000E+00	2.320E-20	1.848E-18	2.153E-16	1.486E-14	1.116E-12	3.044E-11	3.212E-10
Pb-210	U-238	3.359E-07	0.000E+00	4.874E-24	3.882E-22	4.522E-20	3.121E-18	2.343E-16	6.394E-15	6.746E-14
Pb-210	U-238	3.196E-07	0.000E+00	4.637E-24	3.693E-22	4.302E-20	2.970E-18	2.229E-16	6.084E-15	6.419E-14
Pb-210	U-238	6.713E-11	0.000E+00	9.740E-28	7.758E-26	9.036E-24	6.238E-22	4.683E-20	1.278E-18	1.348E-17
Pb-210	U-238	3.200E-10	0.000E+00	4.643E-27	3.698E-25	4.307E-23	2.973E-21	2.232E-19	6.091E-18	6.426E-17
Pb-210	U-238	9.980E-01	0.000E+00	1.448E-17	1.153E-15	1.343E-13	9.273E-12	6.961E-10	1.900E-08	2.004E-07
Pb-210	U-238	2.096E-04	0.000E+00	3.041E-21	2.422E-19	2.822E-17	1.948E-15	1.462E-13	3.990E-12	4.210E-11
Pb-210	U-238	1.994E-04	0.000E+00	2.894E-21	2.305E-19	2.685E-17	1.853E-15	1.391E-13	3.796E-12	4.005E-11
Pb-210	U-238	4.189E-08	0.000E+00	6.078E-25	4.841E-23	5.639E-21	3.893E-19	2.922E-17	7.974E-16	8.413E-15
Pb-210	U-238	1.997E-07	0.000E+00	2.897E-24	2.308E-22	2.688E-20	1.855E-18	1.393E-16	3.801E-15	4.010E-14
Pb-210	ΣS(j):		1.000E+00	9.983E-01	9.949E-01	9.825E-01	9.444E-01	8.086E-01	5.246E-01	1.988E-01
Po-210	Pb-210	1.000E+00	0.000E+00	8.172E-01	9.104E-01	7.263E-01	3.763E-01	3.765E-02	5.240E-05	5.269E-15
Po-210	Po-210	1.000E+00	1.000E+00	1.579E-01	3.935E-03	9.623E-09	8.911E-25	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	0.000E+00	1.660E-02	7.271E-02	2.479E-01	5.564E-01	7.389E-01	4.437E-01	6.220E-02
Po-210	Ra-226	2.100E-04	0.000E+00	3.486E-06	1.527E-05	5.206E-05	1.169E-04	1.552E-04	9.319E-05	1.307E-05
Po-210	Ra-226	1.998E-04	0.000E+00	3.317E-06	1.453E-05	4.953E-05	1.112E-04	1.477E-04	8.867E-05	1.243E-05
Po-210	Ra-226	4.196E-08	0.000E+00	6.967E-10	3.052E-09	1.040E-08	2.336E-08	3.101E-08	1.862E-08	2.611E-09
Po-210	Ra-226	2.000E-07	0.000E+00	3.321E-09	1.455E-08	4.959E-08	1.113E-07	1.478E-07	8.877E-08	1.245E-08
Po-210	Th-230	9.996E-01	0.000E+00	2.726E-06	4.114E-05	5.383E-04	4.191E-03	2.562E-02	7.655E-02	1.345E-01
Po-210	Th-230	2.100E-04	0.000E+00	5.727E-10	8.641E-09	1.131E-07	8.803E-07	5.381E-06	1.608E-05	2.825E-05
Po-210	Th-230	1.998E-04	0.000E+00	5.448E-10	8.221E-09	1.076E-07	8.375E-07	5.120E-06	1.530E-05	2.687E-05
Po-210	Th-230	4.196E-08	0.000E+00	1.144E-13	1.727E-12	2.260E-11	1.759E-10	1.075E-09	3.213E-09	5.645E-09
Po-210	Th-230	2.000E-07	0.000E+00	5.455E-13	8.231E-12	1.077E-10	8.386E-10	5.126E-09	1.532E-08	2.691E-08
Po-210	U-234	9.996E-01	0.000E+00	6.770E-12	3.343E-10	1.601E-08	4.001E-07	8.895E-06	7.995E-05	3.166E-04
Po-210	U-234	2.100E-04	0.000E+00	1.422E-15	7.021E-14	3.363E-12	8.403E-11	1.868E-09	1.679E-08	6.650E-08
Po-210	U-234	1.998E-04	0.000E+00	1.353E-15	6.680E-14	3.199E-12	7.995E-11	1.778E-09	1.598E-08	6.327E-08
Po-210	U-234	4.196E-08	0.000E+00	2.842E-19	1.403E-17	6.720E-16	1.679E-14	3.734E-13	3.356E-12	1.329E-11
Po-210	U-234	2.000E-07	0.000E+00	1.355E-18	6.688E-17	3.203E-15	8.005E-14	1.780E-12	1.600E-11	6.335E-11
Po-210	U-238	1.599E-03	0.000E+00	6.444E-21	1.016E-18	1.745E-16	1.378E-14	1.086E-12	3.003E-11	3.181E-10
Po-210	U-238	3.359E-07	0.000E+00	1.353E-24	2.133E-22	3.666E-20	2.893E-18	2.281E-16	6.308E-15	6.682E-14
Po-210	U-238	3.196E-07	0.000E+00	1.288E-24	2.030E-22	3.487E-20	2.753E-18	2.170E-16	6.002E-15	6.358E-14

Summary : RESRAD Recreator (Backpacker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	0.000E+00	2.705E-28	4.263E-26	7.325E-24	5.782E-22	4.558E-20	1.261E-18	1.335E-17
Po-210	U-238	3.200E-10	0.000E+00	1.289E-27	2.032E-25	3.492E-23	2.756E-21	2.173E-19	6.009E-18	6.366E-17
Po-210	U-238	9.980E-01	0.000E+00	4.021E-18	6.337E-16	1.089E-13	8.596E-12	6.776E-10	1.874E-08	1.985E-07
Po-210	U-238	2.096E-04	0.000E+00	8.445E-22	1.331E-19	2.287E-17	1.806E-15	1.423E-13	3.936E-12	4.170E-11
Po-210	U-238	1.994E-04	0.000E+00	8.035E-22	1.266E-19	2.176E-17	1.718E-15	1.354E-13	3.745E-12	3.967E-11
Po-210	U-238	4.189E-08	0.000E+00	1.688E-25	2.660E-23	4.571E-21	3.608E-19	2.844E-17	7.866E-16	8.333E-15
Po-210	U-238	1.997E-07	0.000E+00	8.045E-25	1.268E-22	2.179E-20	1.720E-18	1.356E-16	3.750E-15	3.972E-14
Po-210	ΣS(j):		1.000E+00	9.917E-01	9.871E-01	9.748E-01	9.371E-01	8.024E-01	5.206E-01	1.971E-01
Pb-210	Pb-210	1.900E-08	1.900E-08	1.839E-08	1.722E-08	1.368E-08	7.084E-09	7.088E-10	9.865E-13	9.921E-23
Pb-210	Ra-226	1.899E-08	0.000E+00	5.825E-10	1.687E-09	4.979E-09	1.077E-08	1.415E-08	8.492E-09	1.191E-09
Pb-210	Ra-226	3.989E-12	0.000E+00	1.224E-13	3.543E-13	1.046E-12	2.263E-12	2.973E-12	1.784E-12	2.501E-13
Pb-210	Ra-226	3.795E-12	0.000E+00	1.164E-13	3.371E-13	9.951E-13	2.153E-12	2.829E-12	1.697E-12	2.379E-13
Pb-210	Ra-226	7.972E-16	0.000E+00	2.445E-17	7.080E-17	2.090E-16	4.521E-16	5.941E-16	3.565E-16	4.997E-17
Pb-210	Ra-226	3.800E-15	0.000E+00	1.166E-16	3.375E-16	9.963E-16	2.155E-15	2.832E-15	1.699E-15	2.382E-16
Pb-210	Th-230	1.899E-08	0.000E+00	1.269E-13	1.116E-12	1.143E-11	8.284E-11	4.944E-10	1.469E-09	2.578E-09
Pb-210	Th-230	3.989E-12	0.000E+00	2.666E-17	2.344E-16	2.402E-15	1.740E-14	1.038E-13	3.087E-13	5.415E-13
Pb-210	Th-230	3.795E-12	0.000E+00	2.537E-17	2.230E-16	2.285E-15	1.656E-14	9.880E-14	2.937E-13	5.152E-13
Pb-210	Th-230	7.972E-16	0.000E+00	5.328E-21	4.683E-20	4.800E-19	3.477E-18	2.075E-17	6.168E-17	1.082E-16
Pb-210	Th-230	3.800E-15	0.000E+00	2.540E-20	2.232E-19	2.288E-18	1.658E-17	9.892E-17	2.940E-16	5.158E-16
Pb-210	U-234	1.899E-08	0.000E+00	3.899E-19	1.033E-17	3.577E-16	8.056E-15	1.727E-13	1.537E-12	6.071E-12
Pb-210	U-234	3.989E-12	0.000E+00	8.189E-23	2.169E-21	7.514E-20	1.692E-18	3.627E-17	3.229E-16	1.275E-15
Pb-210	U-234	3.795E-12	0.000E+00	7.792E-23	2.063E-21	7.149E-20	1.610E-18	3.450E-17	3.072E-16	1.213E-15
Pb-210	U-234	7.972E-16	0.000E+00	1.637E-26	4.334E-25	1.502E-23	3.381E-22	7.247E-21	6.452E-20	2.548E-19
Pb-210	U-234	3.800E-15	0.000E+00	7.801E-26	2.066E-24	7.158E-23	1.612E-21	3.455E-20	3.076E-19	1.215E-18
Pb-210	U-238	3.039E-11	0.000E+00	4.409E-28	3.512E-26	4.090E-24	2.824E-22	2.120E-20	5.784E-19	6.103E-18
Pb-210	U-238	6.383E-15	0.000E+00	9.261E-32	7.376E-30	8.592E-28	5.931E-26	4.452E-24	1.215E-22	1.282E-21
Pb-210	U-238	6.073E-15	0.000E+00	8.811E-32	7.018E-30	8.174E-28	5.643E-26	4.236E-24	1.156E-22	1.220E-21
Pb-210	U-238	1.276E-18	0.000E+00	1.851E-35	1.474E-33	1.717E-31	1.185E-29	8.897E-28	2.428E-26	2.562E-25
Pb-210	U-238	6.080E-18	0.000E+00	8.821E-35	7.026E-33	8.184E-31	5.650E-29	4.241E-27	1.157E-25	1.221E-24
Pb-210	U-238	1.896E-08	0.000E+00	2.751E-25	2.191E-23	2.552E-21	1.762E-19	1.323E-17	3.609E-16	3.808E-15
Pb-210	U-238	3.983E-12	0.000E+00	5.779E-29	4.603E-27	5.361E-25	3.701E-23	2.778E-21	7.581E-20	7.999E-19
Pb-210	U-238	3.789E-12	0.000E+00	5.498E-29	4.379E-27	5.101E-25	3.521E-23	2.643E-21	7.213E-20	7.610E-19
Pb-210	U-238	7.959E-16	0.000E+00	1.155E-32	9.198E-31	1.071E-28	7.396E-27	5.552E-25	1.515E-23	1.598E-22
Pb-210	U-238	3.794E-15	0.000E+00	5.505E-32	4.384E-30	5.107E-28	3.525E-26	2.646E-24	7.222E-23	7.619E-22
Pb-210	ΣS(j):		1.900E-08	1.897E-08	1.890E-08	1.867E-08	1.794E-08	1.536E-08	9.968E-09	3.776E-09
Ra-226	Ra-226	9.996E-01	9.996E-01	9.968E-01	9.912E-01	9.719E-01	9.189E-01	7.550E-01	4.306E-01	6.037E-02
Ra-226	Ra-226	1.319E-06	1.319E-06	1.316E-06	1.308E-06	1.283E-06	1.213E-06	9.965E-07	5.684E-07	7.968E-08
Ra-226	Th-230	9.996E-01	0.000E+00	4.324E-04	1.294E-03	4.270E-03	1.246E-02	3.773E-02	8.763E-02	1.437E-01
Ra-226	Th-230	1.319E-06	0.000E+00	5.708E-10	1.708E-09	5.636E-09	1.644E-08	4.981E-08	1.157E-07	1.897E-07
Ra-226	Th-230	1.899E-08	0.000E+00	8.216E-12	2.458E-11	8.113E-11	2.367E-10	7.169E-10	1.665E-09	2.731E-09
Ra-226	U-234	9.996E-01	0.000E+00	1.987E-09	1.781E-08	1.951E-07	1.686E-06	1.627E-05	9.938E-05	3.425E-04
Ra-226	U-234	1.319E-06	0.000E+00	2.623E-15	2.351E-14	2.575E-13	2.225E-12	2.147E-11	1.312E-10	4.521E-10
Ra-226	U-234	1.899E-08	0.000E+00	3.775E-17	3.384E-16	3.706E-15	3.203E-14	3.091E-13	1.888E-12	6.508E-12
Ra-226	U-238	1.599E-03	0.000E+00	2.991E-18	8.038E-17	2.928E-15	7.542E-14	2.371E-12	4.053E-11	3.504E-10
Ra-226	U-238	2.111E-09	0.000E+00	3.948E-24	1.061E-22	3.865E-21	9.955E-20	3.130E-18	5.351E-17	4.625E-16
Ra-226	U-238	3.039E-11	0.000E+00	5.683E-26	1.527E-24	5.563E-23	1.433E-21	4.505E-20	7.701E-19	6.657E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.866E-15	5.015E-14	1.827E-12	4.706E-11	1.480E-09	2.529E-08	2.186E-07

Summary : RESRAD Recreator (Backpacker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	0.000E+00	2.464E-21	6.620E-20	2.412E-18	6.212E-17	1.953E-15	3.339E-14	2.886E-13
Ra-226	U-238	1.896E-08	0.000E+00	3.546E-23	9.529E-22	3.471E-20	8.941E-19	2.811E-17	4.806E-16	4.154E-15
Ra-226	ΣS(j):		9.996E-01	9.972E-01	9.925E-01	9.762E-01	9.313E-01	7.927E-01	5.184E-01	2.044E-01
Pb-210	Ra-226	1.319E-06	0.000E+00	4.047E-08	1.172E-07	3.459E-07	7.484E-07	9.833E-07	5.900E-07	8.271E-08
Pb-210	Ra-226	2.771E-10	0.000E+00	8.501E-12	2.461E-11	7.266E-11	1.572E-10	2.065E-10	1.239E-10	1.737E-11
Pb-210	Ra-226	2.637E-10	0.000E+00	8.088E-12	2.342E-11	6.913E-11	1.496E-10	1.965E-10	1.179E-10	1.653E-11
Pb-210	Ra-226	5.538E-14	0.000E+00	1.699E-15	4.919E-15	1.452E-14	3.141E-14	4.128E-14	2.476E-14	3.472E-15
Pb-210	Ra-226	2.640E-13	0.000E+00	8.097E-15	2.345E-14	6.922E-14	1.497E-13	1.967E-13	1.180E-13	1.655E-14
Pb-210	Th-230	1.319E-06	0.000E+00	8.818E-12	7.752E-11	7.944E-10	5.755E-09	3.435E-08	1.021E-07	1.791E-07
Pb-210	Th-230	2.771E-10	0.000E+00	1.852E-15	1.628E-14	1.669E-13	1.209E-12	7.215E-12	2.144E-11	3.762E-11
Pb-210	Th-230	2.637E-10	0.000E+00	1.762E-15	1.549E-14	1.588E-13	1.150E-12	6.864E-12	2.040E-11	3.579E-11
Pb-210	Th-230	5.538E-14	0.000E+00	3.702E-19	3.254E-18	3.335E-17	2.416E-16	1.442E-15	4.285E-15	7.518E-15
Pb-210	Th-230	2.640E-13	0.000E+00	1.764E-18	1.551E-17	1.589E-16	1.152E-15	6.872E-15	2.043E-14	3.584E-14
Pb-210	U-234	1.319E-06	0.000E+00	2.709E-17	7.173E-16	2.485E-14	5.597E-13	1.200E-11	1.068E-10	4.218E-10
Pb-210	U-234	2.771E-10	0.000E+00	5.689E-21	1.507E-19	5.220E-18	1.176E-16	2.519E-15	2.243E-14	8.860E-14
Pb-210	U-234	2.637E-10	0.000E+00	5.413E-21	1.433E-19	4.967E-18	1.118E-16	2.397E-15	2.134E-14	8.429E-14
Pb-210	U-234	5.538E-14	0.000E+00	1.137E-24	3.011E-23	1.043E-21	2.349E-20	5.035E-19	4.483E-18	1.771E-17
Pb-210	U-234	2.640E-13	0.000E+00	5.420E-24	1.435E-22	4.973E-21	1.120E-19	2.400E-18	2.137E-17	8.439E-17
Pb-210	U-238	2.111E-09	0.000E+00	3.063E-26	2.440E-24	2.842E-22	1.962E-20	1.473E-18	4.019E-17	4.240E-16
Pb-210	U-238	4.434E-13	0.000E+00	6.434E-30	5.124E-28	5.969E-26	4.120E-24	3.093E-22	8.441E-21	8.905E-20
Pb-210	U-238	4.219E-13	0.000E+00	6.121E-30	4.875E-28	5.679E-26	3.920E-24	2.943E-22	8.031E-21	8.473E-20
Pb-210	U-238	8.862E-17	0.000E+00	1.286E-33	1.024E-31	1.193E-29	8.234E-28	6.181E-26	1.687E-24	1.780E-23
Pb-210	U-238	4.224E-16	0.000E+00	6.129E-33	4.881E-31	5.686E-29	3.925E-27	2.946E-25	8.040E-24	8.483E-23
Pb-210	U-238	1.317E-06	0.000E+00	1.911E-23	1.522E-21	1.773E-19	1.224E-17	9.189E-16	2.508E-14	2.646E-13
Pb-210	U-238	2.767E-10	0.000E+00	4.015E-27	3.198E-25	3.725E-23	2.571E-21	1.930E-19	5.267E-18	5.557E-17
Pb-210	U-238	2.633E-10	0.000E+00	3.820E-27	3.042E-25	3.544E-23	2.446E-21	1.836E-19	5.011E-18	5.287E-17
Pb-210	U-238	5.530E-14	0.000E+00	8.023E-31	6.390E-29	7.443E-27	5.138E-25	3.857E-23	1.053E-21	1.110E-20
Pb-210	U-238	2.636E-13	0.000E+00	3.824E-30	3.046E-28	3.548E-26	2.449E-24	1.838E-22	5.017E-21	5.293E-20
Pb-210	ΣS(j):		0.000E+00	4.050E-08	1.173E-07	3.469E-07	7.544E-07	1.018E-06	6.925E-07	2.624E-07
Ra-226	Ra-226	1.899E-08	1.899E-08	1.894E-08	1.883E-08	1.847E-08	1.746E-08	1.434E-08	8.182E-09	1.147E-09
Ra-226	Ra-226	2.100E-04	2.100E-04	2.094E-04	2.082E-04	2.041E-04	1.930E-04	1.586E-04	9.045E-05	1.268E-05
Ra-226	ΣS(j):		2.100E-04	2.094E-04	2.082E-04	2.042E-04	1.930E-04	1.586E-04	9.046E-05	1.268E-05
Ra-226	Ra-226	2.771E-10	2.771E-10	2.764E-10	2.748E-10	2.695E-10	2.548E-10	2.093E-10	1.194E-10	1.674E-11
Ra-226	Ra-226	3.989E-12	3.989E-12	3.978E-12	3.956E-12	3.879E-12	3.667E-12	3.013E-12	1.719E-12	2.409E-13
Ra-226	ΣS(j):		2.811E-10	2.803E-10	2.788E-10	2.734E-10	2.584E-10	2.123E-10	1.211E-10	1.698E-11
Ra-226	Ra-226	1.998E-04	1.998E-04	1.992E-04	1.981E-04	1.942E-04	1.836E-04	1.509E-04	8.606E-05	1.206E-05
Ra-226	Ra-226	2.637E-10	2.637E-10	2.629E-10	2.615E-10	2.564E-10	2.424E-10	1.991E-10	1.136E-10	1.592E-11
Ra-226	Th-230	1.998E-04	0.000E+00	8.642E-08	2.585E-07	8.533E-07	2.489E-06	7.541E-06	1.751E-05	2.872E-05
Ra-226	Th-230	2.637E-10	0.000E+00	1.141E-13	3.412E-13	1.126E-12	3.286E-12	9.954E-12	2.312E-11	3.792E-11
Ra-226	Th-230	3.795E-12	0.000E+00	1.642E-15	4.912E-15	1.621E-14	4.730E-14	1.433E-13	3.327E-13	5.458E-13
Ra-226	U-234	1.998E-04	0.000E+00	3.971E-13	3.559E-12	3.898E-11	3.368E-10	3.251E-09	1.986E-08	6.845E-08
Ra-226	U-234	2.637E-10	0.000E+00	5.241E-19	4.698E-18	5.146E-17	4.446E-16	4.291E-15	2.622E-14	9.036E-14
Ra-226	U-234	3.795E-12	0.000E+00	7.544E-21	6.762E-20	7.407E-19	6.400E-18	6.177E-17	3.773E-16	1.301E-15
Ra-226	U-238	3.196E-07	0.000E+00	5.977E-22	1.606E-20	5.851E-19	1.507E-17	4.739E-16	8.100E-15	7.002E-14
Ra-226	U-238	4.219E-13	0.000E+00	7.890E-28	2.120E-26	7.724E-25	1.989E-23	6.255E-22	1.069E-20	9.243E-20

Summary : RESRAD Recreator (Backpacker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	0.000E+00	1.136E-29	3.052E-28	1.112E-26	2.864E-25	9.003E-24	1.539E-22	1.330E-21
Ra-226	U-238	1.994E-04	0.000E+00	3.730E-19	1.002E-17	3.651E-16	9.404E-15	2.957E-13	5.055E-12	4.369E-11
Ra-226	U-238	2.633E-10	0.000E+00	4.923E-25	1.323E-23	4.820E-22	1.241E-20	3.903E-19	6.672E-18	5.768E-17
Ra-226	U-238	3.789E-12	0.000E+00	7.087E-27	1.904E-25	6.937E-24	1.787E-22	5.618E-21	9.604E-20	8.302E-19
Ra-226	ΣS(j):		1.998E-04	1.993E-04	1.983E-04	1.951E-04	1.861E-04	1.584E-04	1.036E-04	4.086E-05
Ra-226	Ra-226	3.795E-12	3.795E-12	3.785E-12	3.764E-12	3.690E-12	3.489E-12	2.867E-12	1.635E-12	2.292E-13
Ra-226	Ra-226	4.196E-08	4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	ΣS(j):		4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	Ra-226	5.538E-14	5.538E-14	5.523E-14	5.492E-14	5.385E-14	5.091E-14	4.183E-14	2.386E-14	3.345E-15
Ra-226	Ra-226	7.972E-16	7.972E-16	7.950E-16	7.905E-16	7.751E-16	7.328E-16	6.021E-16	3.434E-16	4.814E-17
Ra-226	ΣS(j):		5.618E-14	5.602E-14	5.571E-14	5.463E-14	5.164E-14	4.243E-14	2.420E-14	3.393E-15
Ra-226	Ra-226	2.000E-07	2.000E-07	1.994E-07	1.983E-07	1.945E-07	1.838E-07	1.511E-07	8.616E-08	1.208E-08
Ra-226	Ra-226	2.640E-13	2.640E-13	2.633E-13	2.618E-13	2.567E-13	2.427E-13	1.994E-13	1.137E-13	1.594E-14
Ra-226	Th-230	2.000E-07	0.000E+00	8.652E-11	2.588E-10	8.543E-10	2.492E-09	7.550E-09	1.753E-08	2.876E-08
Ra-226	Th-230	2.640E-13	0.000E+00	1.142E-16	3.417E-16	1.128E-15	3.290E-15	9.966E-15	2.314E-14	3.796E-14
Ra-226	Th-230	3.800E-15	0.000E+00	1.644E-18	4.918E-18	1.623E-17	4.736E-17	1.434E-16	3.331E-16	5.464E-16
Ra-226	U-234	2.000E-07	0.000E+00	3.975E-16	3.563E-15	3.903E-14	3.372E-13	3.255E-12	1.988E-11	6.853E-11
Ra-226	U-234	2.640E-13	0.000E+00	5.248E-22	4.704E-21	5.152E-20	4.452E-19	4.296E-18	2.625E-17	9.046E-17
Ra-226	U-234	3.800E-15	0.000E+00	7.553E-24	6.770E-23	7.416E-22	6.408E-21	6.184E-20	3.778E-19	1.302E-18
Ra-226	U-238	3.200E-10	0.000E+00	5.984E-25	1.608E-23	5.858E-22	1.509E-20	4.744E-19	8.110E-18	7.011E-17
Ra-226	U-238	4.224E-16	0.000E+00	7.899E-31	2.123E-29	7.733E-28	1.992E-26	6.262E-25	1.071E-23	9.254E-23
Ra-226	U-238	6.080E-18	0.000E+00	1.137E-32	3.056E-31	1.113E-29	2.867E-28	9.014E-27	1.541E-25	1.332E-24
Ra-226	U-238	1.997E-07	0.000E+00	3.734E-22	1.003E-20	3.656E-19	9.416E-18	2.960E-16	5.061E-15	4.375E-14
Ra-226	U-238	2.636E-13	0.000E+00	4.929E-28	1.325E-26	4.826E-25	1.243E-23	3.908E-22	6.680E-21	5.775E-20
Ra-226	U-238	3.794E-15	0.000E+00	7.095E-30	1.907E-28	6.946E-27	1.789E-25	5.625E-24	9.615E-23	8.312E-22
Ra-226	ΣS(j):		2.000E-07	1.995E-07	1.986E-07	1.953E-07	1.863E-07	1.586E-07	1.037E-07	4.091E-08
Ra-226	Ra-226	3.800E-15	3.800E-15	3.789E-15	3.768E-15	3.695E-15	3.493E-15	2.870E-15	1.637E-15	2.295E-16
Th-230	Th-230	9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.984E-01	9.960E-01	9.877E-01
Th-230	Th-230	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.318E-06	1.315E-06	1.304E-06
Th-230	U-234	9.996E-01	0.000E+00	9.176E-06	2.744E-05	9.040E-05	2.624E-04	7.816E-04	1.742E-03	2.644E-03
Th-230	U-234	1.319E-06	0.000E+00	1.211E-11	3.622E-11	1.193E-10	3.464E-10	1.032E-09	2.299E-09	3.490E-09
Th-230	U-234	1.899E-08	0.000E+00	1.743E-13	5.213E-13	1.718E-12	4.986E-12	1.485E-11	3.310E-11	5.023E-11
Th-230	U-234	2.100E-04	0.000E+00	1.927E-09	5.763E-09	1.899E-08	5.512E-08	1.642E-07	3.659E-07	5.553E-07
Th-230	U-234	2.771E-10	0.000E+00	2.544E-15	7.607E-15	2.506E-14	7.275E-14	2.167E-13	4.830E-13	7.330E-13
Th-230	U-234	3.989E-12	0.000E+00	3.662E-17	1.095E-16	3.608E-16	1.047E-15	3.119E-15	6.952E-15	1.055E-14
Th-230	U-234	1.998E-04	0.000E+00	1.834E-09	5.483E-09	1.807E-08	5.244E-08	1.562E-07	3.481E-07	5.283E-07
Th-230	U-234	2.637E-10	0.000E+00	2.421E-15	7.238E-15	2.385E-14	6.922E-14	2.062E-13	4.595E-13	6.974E-13
Th-230	U-234	3.795E-12	0.000E+00	3.484E-17	1.042E-16	3.432E-16	9.963E-16	2.968E-15	6.614E-15	1.004E-14
Th-230	U-234	4.196E-08	0.000E+00	3.852E-13	1.152E-12	3.795E-12	1.101E-11	3.281E-11	7.312E-11	1.110E-10
Th-230	U-234	5.538E-14	0.000E+00	5.084E-19	1.520E-18	5.009E-18	1.454E-17	4.331E-17	9.651E-17	1.465E-16
Th-230	U-234	7.972E-16	0.000E+00	7.318E-21	2.188E-20	7.210E-20	2.093E-19	6.233E-19	1.389E-18	2.108E-18
Th-230	U-234	2.000E-07	0.000E+00	1.836E-12	5.490E-12	1.809E-11	5.250E-11	1.564E-10	3.485E-10	5.290E-10
Th-230	U-234	2.640E-13	0.000E+00	2.424E-18	7.246E-18	2.388E-17	6.930E-17	2.064E-16	4.601E-16	6.982E-16
Th-230	U-234	3.800E-15	0.000E+00	3.488E-20	1.043E-19	3.437E-19	9.975E-19	2.971E-18	6.622E-18	1.005E-17

Summary : RESRAD Recreator (Backpacker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	0.000E+00	2.072E-14	1.856E-13	2.031E-12	1.749E-11	1.668E-10	9.884E-10	3.158E-09
Th-230	U-238	2.111E-09	0.000E+00	2.734E-20	2.450E-19	2.680E-18	2.308E-17	2.202E-16	1.305E-15	4.168E-15
Th-230	U-238	3.039E-11	0.000E+00	3.936E-22	3.527E-21	3.858E-20	3.323E-19	3.170E-18	1.878E-17	5.999E-17
Th-230	U-238	3.359E-07	0.000E+00	4.351E-18	3.899E-17	4.265E-16	3.673E-15	3.504E-14	2.076E-13	6.632E-13
Th-230	U-238	4.434E-13	0.000E+00	5.743E-24	5.146E-23	5.630E-22	4.848E-21	4.626E-20	2.740E-19	8.754E-19
Th-230	U-238	6.383E-15	0.000E+00	8.267E-26	7.408E-25	8.104E-24	6.979E-23	6.658E-22	3.945E-21	1.260E-20
Th-230	U-238	3.196E-07	0.000E+00	4.140E-18	3.709E-17	4.058E-16	3.495E-15	3.334E-14	1.975E-13	6.310E-13
Th-230	U-238	4.219E-13	0.000E+00	5.464E-24	4.896E-23	5.357E-22	4.613E-21	4.401E-20	2.607E-19	8.329E-19
Th-230	U-238	6.073E-15	0.000E+00	7.866E-26	7.048E-25	7.710E-24	6.640E-23	6.335E-22	3.753E-21	1.199E-20
Th-230	U-238	6.713E-11	0.000E+00	8.695E-22	7.791E-21	8.524E-20	7.340E-19	7.003E-18	4.149E-17	1.325E-16
Th-230	U-238	8.862E-17	0.000E+00	1.148E-27	1.028E-26	1.125E-25	9.689E-25	9.244E-24	5.476E-23	1.749E-22
Th-230	U-238	1.276E-18	0.000E+00	1.652E-29	1.480E-28	1.620E-27	1.395E-26	1.331E-25	7.883E-25	2.518E-24
Th-230	U-238	3.200E-10	0.000E+00	4.145E-21	3.714E-20	4.063E-19	3.499E-18	3.338E-17	1.978E-16	6.318E-16
Th-230	U-238	4.224E-16	0.000E+00	5.471E-27	4.902E-26	5.363E-25	4.619E-24	4.406E-23	2.610E-22	8.339E-22
Th-230	U-238	6.080E-18	0.000E+00	7.875E-29	7.056E-28	7.720E-27	6.648E-26	6.342E-25	3.757E-24	1.200E-23
Th-230	U-238	9.980E-01	0.000E+00	1.293E-11	1.158E-10	1.267E-09	1.091E-08	1.041E-07	6.168E-07	1.970E-06
Th-230	U-238	1.317E-06	0.000E+00	1.706E-17	1.529E-16	1.673E-15	1.440E-14	1.374E-13	8.141E-13	2.601E-12
Th-230	U-238	1.896E-08	0.000E+00	2.456E-19	2.201E-18	2.408E-17	2.073E-16	1.978E-15	1.172E-14	3.744E-14
Th-230	U-238	2.096E-04	0.000E+00	2.715E-15	2.433E-14	2.662E-13	2.292E-12	2.187E-11	1.295E-10	4.138E-10
Th-230	U-238	2.767E-10	0.000E+00	3.584E-21	3.211E-20	3.513E-19	3.025E-18	2.886E-17	1.710E-16	5.463E-16
Th-230	U-238	3.983E-12	0.000E+00	5.159E-23	4.622E-22	5.057E-21	4.355E-20	4.155E-19	2.461E-18	7.863E-18
Th-230	U-238	1.994E-04	0.000E+00	2.583E-15	2.315E-14	2.532E-13	2.181E-12	2.080E-11	1.233E-10	3.937E-10
Th-230	U-238	2.633E-10	0.000E+00	3.410E-21	3.055E-20	3.343E-19	2.878E-18	2.746E-17	1.627E-16	5.197E-16
Th-230	U-238	3.789E-12	0.000E+00	4.908E-23	4.398E-22	4.811E-21	4.143E-20	3.953E-19	2.342E-18	7.481E-18
Th-230	U-238	4.189E-08	0.000E+00	5.426E-19	4.862E-18	5.319E-17	4.580E-16	4.370E-15	2.589E-14	8.270E-14
Th-230	U-238	5.530E-14	0.000E+00	7.162E-25	6.417E-24	7.021E-23	6.046E-22	5.768E-21	3.417E-20	1.092E-19
Th-230	U-238	7.959E-16	0.000E+00	1.031E-26	9.237E-26	1.011E-24	8.703E-24	8.303E-23	4.919E-22	1.571E-21
Th-230	U-238	1.997E-07	0.000E+00	2.586E-18	2.317E-17	2.535E-16	2.183E-15	2.083E-14	1.234E-13	3.942E-13
Th-230	U-238	2.636E-13	0.000E+00	3.414E-24	3.059E-23	3.347E-22	2.882E-21	2.749E-20	1.629E-19	5.204E-19
Th-230	U-238	3.794E-15	0.000E+00	4.914E-26	4.403E-25	4.817E-24	4.148E-23	3.958E-22	2.345E-21	7.490E-21
Th-230	ΣS(j):		9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.977E-01	9.903E-01
Th-230	Th-230	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.897E-08	1.892E-08	1.877E-08
Th-230	Th-230	2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Th-230	ΣS(j):		2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Ra-226	Th-230	2.100E-04	0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.926E-06	1.841E-05	3.019E-05
Ra-226	Th-230	3.989E-12	0.000E+00	1.726E-15	5.163E-15	1.704E-14	4.971E-14	1.506E-13	3.497E-13	5.736E-13
Ra-226	U-234	2.100E-04	0.000E+00	4.173E-13	3.741E-12	4.097E-11	3.540E-10	3.417E-09	2.087E-08	7.195E-08
Ra-226	U-234	2.771E-10	0.000E+00	5.509E-19	4.938E-18	5.408E-17	4.673E-16	4.510E-15	2.755E-14	9.497E-14
Ra-226	U-234	3.989E-12	0.000E+00	7.929E-21	7.107E-20	7.785E-19	6.727E-18	6.492E-17	3.966E-16	1.367E-15
Ra-226	U-238	3.359E-07	0.000E+00	6.282E-22	1.688E-20	6.150E-19	1.584E-17	4.980E-16	8.514E-15	7.360E-14
Ra-226	U-238	4.434E-13	0.000E+00	8.293E-28	2.228E-26	8.118E-25	2.091E-23	6.574E-22	1.124E-20	9.715E-20
Ra-226	U-238	6.383E-15	0.000E+00	1.194E-29	3.208E-28	1.169E-26	3.010E-25	9.463E-24	1.618E-22	1.398E-21
Ra-226	U-238	2.096E-04	0.000E+00	3.920E-19	1.053E-17	3.838E-16	9.885E-15	3.108E-13	5.313E-12	4.592E-11
Ra-226	U-238	2.767E-10	0.000E+00	5.175E-25	1.391E-23	5.066E-22	1.305E-20	4.102E-19	7.013E-18	6.062E-17
Ra-226	U-238	3.983E-12	0.000E+00	7.448E-27	2.002E-25	7.292E-24	1.878E-22	5.905E-21	1.009E-19	8.726E-19
Ra-226	ΣS(j):		0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.929E-06	1.843E-05	3.026E-05

Summary : RESRAD Recreator (Backpacker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.770E-10	2.768E-10	2.762E-10	2.738E-10
Th-230	Th-230	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.988E-12	3.984E-12	3.975E-12	3.942E-12
Th-230	ΣS(j):		2.811E-10	2.811E-10	2.811E-10	2.811E-10	2.810E-10	2.808E-10	2.801E-10	2.778E-10
Ra-226	Th-230	2.771E-10	0.000E+00	1.199E-13	3.587E-13	1.184E-12	3.454E-12	1.046E-11	2.430E-11	3.985E-11
Th-230	Th-230	1.998E-04	1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	2.637E-10	2.637E-10	2.637E-10	2.637E-10	2.636E-10	2.636E-10	2.634E-10	2.627E-10	2.605E-10
Th-230	ΣS(j):		1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.794E-12	3.791E-12	3.782E-12	3.750E-12
Th-230	Th-230	4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.194E-08	4.191E-08	4.181E-08	4.146E-08
Th-230	ΣS(j):		4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.191E-08	4.181E-08	4.146E-08
Ra-226	Th-230	4.196E-08	0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.229E-10	1.584E-09	3.678E-09	6.033E-09
Ra-226	Th-230	7.972E-16	0.000E+00	3.449E-19	1.032E-18	3.405E-18	9.935E-18	3.009E-17	6.989E-17	1.146E-16
Ra-226	U-234	4.196E-08	0.000E+00	8.340E-17	7.475E-16	8.188E-15	7.075E-14	6.828E-13	4.172E-12	1.438E-11
Ra-226	U-234	5.538E-14	0.000E+00	1.101E-22	9.868E-22	1.081E-20	9.339E-20	9.014E-19	5.506E-18	1.898E-17
Ra-226	U-234	7.972E-16	0.000E+00	1.585E-24	1.420E-23	1.556E-22	1.344E-21	1.297E-20	7.926E-20	2.732E-19
Ra-226	U-238	6.713E-11	0.000E+00	1.255E-25	3.374E-24	1.229E-22	3.166E-21	9.953E-20	1.701E-18	1.471E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.657E-31	4.453E-30	1.622E-28	4.179E-27	1.314E-25	2.246E-24	1.941E-23
Ra-226	U-238	1.276E-18	0.000E+00	2.385E-33	6.410E-32	2.335E-30	6.015E-29	1.891E-27	3.233E-26	2.794E-25
Ra-226	U-238	4.189E-08	0.000E+00	7.834E-23	2.105E-21	7.669E-20	1.975E-18	6.211E-17	1.062E-15	9.178E-15
Ra-226	U-238	5.530E-14	0.000E+00	1.034E-28	2.779E-27	1.012E-25	2.607E-24	8.198E-23	1.401E-21	1.211E-20
Ra-226	U-238	7.959E-16	0.000E+00	1.488E-30	4.000E-29	1.457E-27	3.753E-26	1.180E-24	2.017E-23	1.744E-22
Ra-226	ΣS(j):		0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.230E-10	1.585E-09	3.683E-09	6.048E-09
Th-230	Th-230	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.536E-14	5.532E-14	5.519E-14	5.473E-14
Th-230	Th-230	7.972E-16	7.972E-16	7.972E-16	7.972E-16	7.971E-16	7.969E-16	7.962E-16	7.943E-16	7.877E-16
Th-230	ΣS(j):		5.618E-14	5.618E-14	5.618E-14	5.618E-14	5.616E-14	5.611E-14	5.598E-14	5.551E-14
Ra-226	Th-230	5.538E-14	0.000E+00	2.396E-17	7.168E-17	2.366E-16	6.902E-16	2.091E-15	4.855E-15	7.964E-15
Th-230	Th-230	2.000E-07	2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.639E-13	2.637E-13	2.631E-13	2.609E-13
Th-230	ΣS(j):		2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.799E-15	3.795E-15	3.786E-15	3.755E-15
U-234	U-234	9.996E-01	9.996E-01	9.963E-01	9.897E-01	9.669E-01	9.048E-01	7.171E-01	3.690E-01	3.607E-02
U-234	U-234	1.319E-06	1.319E-06	1.315E-06	1.306E-06	1.276E-06	1.194E-06	9.465E-07	4.871E-07	4.761E-08
U-234	U-238	1.599E-03	0.000E+00	4.501E-09	1.341E-08	4.368E-08	1.226E-07	3.240E-07	5.003E-07	1.632E-07
U-234	U-238	2.111E-09	0.000E+00	5.941E-15	1.770E-14	5.766E-14	1.619E-13	4.276E-13	6.604E-13	2.154E-13
U-234	U-238	3.039E-11	0.000E+00	8.551E-17	2.548E-16	8.299E-16	2.330E-15	6.155E-15	9.505E-15	3.100E-15
U-234	U-238	3.359E-07	0.000E+00	9.453E-13	2.817E-12	9.175E-12	2.576E-11	6.805E-11	1.051E-10	3.427E-11
U-234	U-238	4.434E-13	0.000E+00	1.248E-18	3.719E-18	1.211E-17	3.400E-17	8.982E-17	1.387E-16	4.524E-17
U-234	U-238	6.383E-15	0.000E+00	1.796E-20	5.353E-20	1.743E-19	4.894E-19	1.293E-18	1.997E-18	6.512E-19
U-234	U-238	3.196E-07	0.000E+00	8.994E-13	2.680E-12	8.729E-12	2.451E-11	6.474E-11	9.997E-11	3.261E-11
U-234	U-238	4.219E-13	0.000E+00	1.187E-18	3.538E-18	1.152E-17	3.235E-17	8.546E-17	1.320E-16	4.304E-17

Summary : RESRAD Recreator (Backpacker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	0.000E+00	1.709E-20	5.093E-20	1.659E-19	4.656E-19	1.230E-18	1.900E-18	6.195E-19
U-234	U-238	6.713E-11	0.000E+00	1.889E-16	5.630E-16	1.834E-15	5.147E-15	1.360E-14	2.100E-14	6.849E-15
U-234	U-238	8.862E-17	0.000E+00	2.494E-22	7.432E-22	2.420E-21	6.794E-21	1.795E-20	2.772E-20	9.040E-21
U-234	U-238	1.276E-18	0.000E+00	3.589E-24	1.070E-23	3.484E-23	9.780E-23	2.584E-22	3.990E-22	1.301E-22
U-234	U-238	3.200E-10	0.000E+00	9.005E-16	2.684E-15	8.740E-15	2.453E-14	6.482E-14	1.001E-13	3.265E-14
U-234	U-238	4.224E-16	0.000E+00	1.189E-21	3.542E-21	1.154E-20	3.239E-20	8.556E-20	1.321E-19	4.309E-20
U-234	U-238	6.080E-18	0.000E+00	1.711E-23	5.099E-23	1.661E-22	4.662E-22	1.232E-21	1.902E-21	6.203E-22
U-234	U-238	9.980E-01	0.000E+00	2.808E-06	8.369E-06	2.726E-05	7.652E-05	2.022E-04	3.122E-04	1.018E-04
U-234	U-238	1.317E-06	0.000E+00	3.707E-12	1.105E-11	3.598E-11	1.010E-10	2.668E-10	4.121E-10	1.344E-10
U-234	U-238	1.896E-08	0.000E+00	5.336E-14	1.590E-13	5.179E-13	1.454E-12	3.841E-12	5.931E-12	1.934E-12
U-234	U-238	2.096E-04	0.000E+00	5.899E-10	1.758E-09	5.725E-09	1.607E-08	4.246E-08	6.557E-08	2.139E-08
U-234	U-238	2.767E-10	0.000E+00	7.787E-16	2.320E-15	7.557E-15	2.122E-14	5.605E-14	8.655E-14	2.823E-14
U-234	U-238	3.983E-12	0.000E+00	1.121E-17	3.340E-17	1.088E-16	3.054E-16	8.068E-16	1.246E-15	4.063E-16
U-234	U-238	1.994E-04	0.000E+00	5.612E-10	1.673E-09	5.447E-09	1.529E-08	4.040E-08	6.238E-08	2.035E-08
U-234	U-238	2.633E-10	0.000E+00	7.408E-16	2.208E-15	7.190E-15	2.018E-14	5.333E-14	8.235E-14	2.686E-14
U-234	U-238	3.789E-12	0.000E+00	1.066E-17	3.178E-17	1.035E-16	2.905E-16	7.676E-16	1.185E-15	3.866E-16
U-234	U-238	4.189E-08	0.000E+00	1.179E-13	3.513E-13	1.144E-12	3.212E-12	8.486E-12	1.310E-11	4.274E-12
U-234	U-238	5.530E-14	0.000E+00	1.556E-19	4.637E-19	1.510E-18	4.240E-18	1.120E-17	1.730E-17	5.641E-18
U-234	U-238	7.959E-16	0.000E+00	2.240E-21	6.675E-21	2.174E-20	6.102E-20	1.612E-19	2.490E-19	8.120E-20
U-234	U-238	1.997E-07	0.000E+00	5.619E-13	1.675E-12	5.454E-12	1.531E-11	4.045E-11	6.246E-11	2.037E-11
U-234	U-238	2.636E-13	0.000E+00	7.417E-19	2.210E-18	7.199E-18	2.021E-17	5.339E-17	8.245E-17	2.689E-17
U-234	U-238	3.794E-15	0.000E+00	1.068E-20	3.182E-20	1.036E-19	2.909E-19	7.685E-19	1.187E-18	3.871E-19
U-234	ΣS(j):		9.996E-01	9.963E-01	9.897E-01	9.670E-01	9.049E-01	7.173E-01	3.693E-01	3.617E-02
U-234	U-234	1.899E-08	1.899E-08	1.893E-08	1.880E-08	1.837E-08	1.719E-08	1.362E-08	7.011E-09	6.853E-10
U-234	U-234	2.100E-04	2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.900E-04	1.506E-04	7.750E-05	7.576E-06
U-234	ΣS(j):		2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.901E-04	1.506E-04	7.751E-05	7.576E-06
U-234	U-234	2.771E-10	2.771E-10	2.762E-10	2.744E-10	2.681E-10	2.509E-10	1.988E-10	1.023E-10	1.000E-11
U-234	U-234	3.989E-12	3.989E-12	3.976E-12	3.950E-12	3.859E-12	3.611E-12	2.862E-12	1.473E-12	1.439E-13
U-234	ΣS(j):		2.811E-10	2.802E-10	2.783E-10	2.719E-10	2.545E-10	2.017E-10	1.038E-10	1.014E-11
U-234	U-234	1.998E-04	1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	2.637E-10	2.637E-10	2.628E-10	2.611E-10	2.551E-10	2.387E-10	1.892E-10	9.733E-11	9.514E-12
U-234	ΣS(j):		1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	3.795E-12	3.795E-12	3.783E-12	3.758E-12	3.671E-12	3.435E-12	2.723E-12	1.401E-12	1.369E-13
U-234	U-234	4.196E-08	4.196E-08	4.182E-08	4.154E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	ΣS(j):		4.196E-08	4.182E-08	4.155E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	U-234	5.538E-14	5.538E-14	5.520E-14	5.484E-14	5.357E-14	5.013E-14	3.973E-14	2.044E-14	1.998E-15
U-234	U-234	7.972E-16	7.972E-16	7.946E-16	7.893E-16	7.712E-16	7.216E-16	5.719E-16	2.943E-16	2.876E-17
U-234	ΣS(j):		5.618E-14	5.600E-14	5.562E-14	5.435E-14	5.085E-14	4.030E-14	2.074E-14	2.027E-15
U-234	U-234	2.000E-07	2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	2.640E-13	2.640E-13	2.631E-13	2.614E-13	2.554E-13	2.390E-13	1.894E-13	9.745E-14	9.526E-15
U-234	ΣS(j):		2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	3.800E-15	3.800E-15	3.787E-15	3.762E-15	3.676E-15	3.440E-15	2.726E-15	1.403E-15	1.371E-16

Summary : RESRAD Recreator (Backpacker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	5.450E-07	5.432E-07	5.396E-07	5.272E-07	4.933E-07	3.911E-07	2.014E-07	1.972E-08
U-238	U-238	1.599E-03	1.599E-03	1.594E-03	1.583E-03	1.547E-03	1.448E-03	1.148E-03	5.909E-04	5.787E-05
U-238	ΣS(j):		1.600E-03	1.595E-03	1.584E-03	1.548E-03	1.448E-03	1.148E-03	5.911E-04	5.789E-05
U-238	U-238	2.111E-09	2.111E-09	2.104E-09	2.090E-09	2.042E-09	1.911E-09	1.515E-09	7.800E-10	7.639E-11
U-238	U-238	3.039E-11	3.039E-11	3.029E-11	3.009E-11	2.940E-11	2.751E-11	2.180E-11	1.123E-11	1.100E-12
U-238	ΣS(j):		2.142E-09	2.134E-09	2.120E-09	2.072E-09	1.939E-09	1.537E-09	7.912E-10	7.749E-11
U-238	U-238	3.359E-07	3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	4.434E-13	4.434E-13	4.420E-13	4.390E-13	4.290E-13	4.014E-13	3.182E-13	1.638E-13	1.605E-14
U-238	ΣS(j):		3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	6.383E-15	6.383E-15	6.362E-15	6.319E-15	6.174E-15	5.778E-15	4.580E-15	2.358E-15	2.310E-16
U-238	U-238	3.196E-07	3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	ΣS(j):		3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	U-238	4.219E-13	4.219E-13	4.205E-13	4.177E-13	4.081E-13	3.819E-13	3.027E-13	1.559E-13	1.527E-14
U-238	U-238	6.073E-15	6.073E-15	6.053E-15	6.012E-15	5.874E-15	5.497E-15	4.357E-15	2.244E-15	2.197E-16
U-238	ΣS(j):		4.280E-13	4.265E-13	4.237E-13	4.140E-13	3.874E-13	3.071E-13	1.581E-13	1.549E-14
U-238	U-238	6.713E-11	6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	8.862E-17	8.862E-17	8.832E-17	8.774E-17	8.572E-17	8.022E-17	6.359E-17	3.274E-17	3.206E-18
U-238	ΣS(j):		6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	1.276E-18	1.276E-18	1.271E-18	1.263E-18	1.234E-18	1.155E-18	9.153E-19	4.712E-19	4.615E-20
U-238	U-238	3.200E-10	3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	ΣS(j):		3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	U-238	4.224E-16	4.224E-16	4.210E-16	4.182E-16	4.086E-16	3.824E-16	3.031E-16	1.561E-16	1.528E-17
U-238	U-238	6.080E-18	6.080E-18	6.060E-18	6.020E-18	5.882E-18	5.504E-18	4.363E-18	2.246E-18	2.200E-19
U-238	ΣS(j):		4.285E-16	4.271E-16	4.242E-16	4.145E-16	3.879E-16	3.075E-16	1.583E-16	1.550E-17
U-238	U-238	9.980E-01	9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.317E-06	1.317E-06	1.313E-06	1.304E-06	1.274E-06	1.192E-06	9.453E-07	4.867E-07	4.767E-08
U-238	ΣS(j):		9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.896E-08	1.896E-08	1.890E-08	1.877E-08	1.834E-08	1.716E-08	1.361E-08	7.005E-09	6.861E-10
U-238	U-238	2.096E-04	2.096E-04	2.089E-04	2.075E-04	2.028E-04	1.898E-04	1.504E-04	7.744E-05	7.585E-06
U-238	ΣS(j):		2.096E-04	2.089E-04	2.076E-04	2.028E-04	1.898E-04	1.504E-04	7.745E-05	7.586E-06
U-238	U-238	2.767E-10	2.767E-10	2.758E-10	2.740E-10	2.677E-10	2.505E-10	1.985E-10	1.022E-10	1.001E-11
U-238	U-238	3.983E-12	3.983E-12	3.970E-12	3.943E-12	3.853E-12	3.605E-12	2.858E-12	1.471E-12	1.441E-13
U-238	ΣS(j):		2.807E-10	2.798E-10	2.779E-10	2.715E-10	2.541E-10	2.014E-10	1.037E-10	1.016E-11
U-238	U-238	1.994E-04	1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	2.633E-10	2.633E-10	2.624E-10	2.607E-10	2.547E-10	2.383E-10	1.889E-10	9.726E-11	9.526E-12
U-238	ΣS(j):		1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	3.789E-12	3.789E-12	3.777E-12	3.752E-12	3.666E-12	3.430E-12	2.719E-12	1.400E-12	1.371E-13

Summary : RESRAD Recreator (Backpacker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	4.189E-08	4.175E-08	4.148E-08	4.052E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	ΣS(j):		4.189E-08	4.176E-08	4.148E-08	4.053E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	U-238	5.530E-14	5.530E-14	5.511E-14	5.475E-14	5.349E-14	5.006E-14	3.968E-14	2.043E-14	2.001E-15
U-238	U-238	7.959E-16	7.959E-16	7.933E-16	7.880E-16	7.699E-16	7.205E-16	5.711E-16	2.941E-16	2.880E-17
U-238	ΣS(j):		5.609E-14	5.591E-14	5.554E-14	5.426E-14	5.078E-14	4.025E-14	2.072E-14	2.030E-15
U-238	U-238	1.997E-07	1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	2.636E-13	2.636E-13	2.627E-13	2.610E-13	2.550E-13	2.386E-13	1.891E-13	9.738E-14	9.537E-15
U-238	ΣS(j):		1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	3.794E-15	3.794E-15	3.781E-15	3.756E-15	3.670E-15	3.434E-15	2.722E-15	1.402E-15	1.373E-16

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 225.02 seconds

Total water/soil iteration failures = 3.160E+02.

RESidual RADioactivity (ResRad) Dose-Modeling Output
Recreator (Sheep Camp)

Summary : Recreator (Sheep Camp)

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Time = 1.000E+00	14
Time = 3.000E+00	15
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Summary : Recreator (Sheep Camp)

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1 (1)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1 (2)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1 (3)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1 (4)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1 (5)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1 (6)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1 (7)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1 (8)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1 (9)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1 (10)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1 (11)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1 (12)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1 (13)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1 (14)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1 (15)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1 (16)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1 (17)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1 (18)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1 (19)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1 (20)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.129E-02	2.077E-02	DCF2 (1)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2 (2)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2 (3)
B-1	Po-210	1.580E-02	1.582E-02	DCF2 (4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2 (5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2 (8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2 (11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2 (14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2 (17)
B-1	Th-230	3.760E-01	3.759E-01	DCF2 (20)
B-1	U-234	3.480E-02	3.479E-02	DCF2 (35)
B-1	U-238	2.970E-02	2.973E-02	DCF2 (50)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2 (51)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2 (66)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	2.585E-03	2.575E-03	DCF3 (1)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3 (2)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3 (3)
D-1	Po-210	4.480E-03	4.477E-03	DCF3 (4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3 (8)
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3 (11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3 (14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3 (17)
D-1	Th-230	7.920E-04	7.918E-04	DCF3 (20)
D-1	U-234	1.830E-04	1.831E-04	DCF3 (35)

Summary : Recreator (Sheep Camp)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	U-238	1.650E-04	1.650E-04	DCF3(50)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(51)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(66)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(35,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(35,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(35,3)
D-34				

Summary : Recreator (Sheep Camp)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(50,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(50,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(50,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(66,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(66,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(66,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(35,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(35,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(50,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(50,2)
D-5				

Summary : Recreator (Sheep Camp)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5				
D-5	U-238+D1 , fish	1.000E+01	1.000E+01	BIOFAC(66,1)
D-5	U-238+D1 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(66,2)
D-5				

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Recreator (Sheep Camp)

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.200E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(35)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(50)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(35)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(50)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ

Summary : Recreator (Sheep Camp)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsat. zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.632E-02	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC (5)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC (20)
R016	Unsat. zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)

Summary : Recreator (Sheep Camp)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (35)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (35,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (35)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (35)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (35)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (50)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (50,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (50)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (50)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (50)
R017	Inhalation rate (m**3/yr)	2.754E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	4.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)

Summary : Recreator (Sheep Camp)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	5.310E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.800E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	4.200E-01	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	5.890E+00	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	3.200E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	2.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Summary : Recreator (Sheep Camp)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary : Recreator (Sheep Camp)

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Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	active
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Recreator (Sheep Camp)

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Pb-210	1.000E+00
Thickness:	2.00 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	1.000E+00
		Th-230	1.000E+00
		U-234	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	4.426E+00	4.415E+00	4.394E+00	4.322E+00	4.124E+00	3.510E+00	2.293E+00	1.234E+00
M(t):	3.688E-01	3.679E-01	3.661E-01	3.602E-01	3.437E-01	2.925E-01	1.911E-01	1.028E-01

Maximum TDOSE(t): 4.426E+00 mrem/yr at t = 0.000E+00 years

Summary : Recreator (Sheep Camp)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	3.031E-03	0.0007	6.170E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	6.405E-02	0.0145	0.000E+00	0.0000	3.725E-02	0.0084
Po-210	1.023E-05	0.0000	1.515E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.696E-02	0.0106	0.000E+00	0.0000	1.545E-02	0.0035
Ra-226	4.153E+00	0.9384	7.501E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.096E-02	0.0025	0.000E+00	0.0000	8.373E-03	0.0019
Th-230	1.350E-03	0.0003	7.903E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	3.656E-04	0.0001	0.000E+00	0.0000	5.989E-03	0.0014
U-234	1.447E-04	0.0000	7.302E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.976E-04	0.0001	0.000E+00	0.0000	1.381E-03	0.0003
U-238	6.467E-02	0.0146	6.238E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.886E-04	0.0001	0.000E+00	0.0000	1.340E-03	0.0003
Total	4.222E+00	0.9540	1.078E-02	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	1.229E-01	0.0278	0.000E+00	0.0000	6.979E-02	0.0158

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.050E-01	0.0237
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.258E-02	0.0141
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.173E+00	0.9429
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.561E-02	0.0035
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.554E-03	0.0006
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.692E-02	0.0151
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.426E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Sheep Camp)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.941E-03	0.0007	7.208E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	9.995E-02	0.0226	0.000E+00	0.0000	4.867E-02	0.0110
Po-210	1.616E-06	0.0000	2.392E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.419E-03	0.0017	0.000E+00	0.0000	2.440E-03	0.0006
Ra-226	4.142E+00	0.9382	7.694E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.367E-02	0.0031	0.000E+00	0.0000	9.749E-03	0.0022
Th-230	3.147E-03	0.0007	7.903E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	3.708E-04	0.0001	0.000E+00	0.0000	5.993E-03	0.0014
U-234	1.443E-04	0.0000	7.279E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.966E-04	0.0001	0.000E+00	0.0000	1.377E-03	0.0003
U-238	6.445E-02	0.0146	6.217E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.877E-04	0.0001	0.000E+00	0.0000	1.335E-03	0.0003
Total	4.212E+00	0.9542	1.077E-02	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	1.220E-01	0.0276	0.000E+00	0.0000	6.957E-02	0.0158

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.523E-01	0.0345
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.884E-03	0.0022
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.166E+00	0.9436
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.741E-02	0.0039
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.545E-03	0.0006
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.670E-02	0.0151
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.415E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Sheep Camp)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.756E-03	0.0006	6.970E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.004E-01	0.0229	0.000E+00	0.0000	4.782E-02	0.0109
Po-210	4.029E-08	0.0000	5.963E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.849E-04	0.0000	0.000E+00	0.0000	6.082E-05	0.0000
Ra-226	4.119E+00	0.9374	8.096E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.995E-02	0.0045	0.000E+00	0.0000	1.274E-02	0.0029
Th-230	6.725E-03	0.0015	7.903E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	3.854E-04	0.0001	0.000E+00	0.0000	6.003E-03	0.0014
U-234	1.434E-04	0.0000	7.232E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.946E-04	0.0001	0.000E+00	0.0000	1.368E-03	0.0003
U-238	6.403E-02	0.0146	6.176E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.858E-04	0.0001	0.000E+00	0.0000	1.326E-03	0.0003
Total	4.192E+00	0.9541	1.075E-02	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	1.215E-01	0.0277	0.000E+00	0.0000	6.931E-02	0.0158

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.517E-01	0.0345
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.464E-04	0.0001
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.152E+00	0.9450
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.102E-02	0.0048
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.529E-03	0.0006
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.626E-02	0.0151
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.394E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Sheep Camp)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.189E-03	0.0005	5.541E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	7.991E-02	0.0185	0.000E+00	0.0000	3.804E-02	0.0088
Po-210	9.851E-14	0.0000	1.458E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.522E-10	0.0000	0.000E+00	0.0000	1.487E-10	0.0000
Ra-226	4.039E+00	0.9345	9.287E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	3.899E-02	0.0090	0.000E+00	0.0000	2.174E-02	0.0050
Th-230	1.909E-02	0.0044	7.905E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	4.759E-04	0.0001	0.000E+00	0.0000	6.055E-03	0.0014
U-234	1.409E-04	0.0000	7.071E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.879E-04	0.0001	0.000E+00	0.0000	1.337E-03	0.0003
U-238	6.256E-02	0.0145	6.034E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.792E-04	0.0001	0.000E+00	0.0000	1.296E-03	0.0003
Total	4.123E+00	0.9539	1.070E-02	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	1.199E-01	0.0278	0.000E+00	0.0000	6.846E-02	0.0158

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.207E-01	0.0279
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.025E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E+00	0.9488
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.353E-02	0.0078
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.473E-03	0.0006
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.474E-02	0.0150
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.322E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Sheep Camp)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.134E-03	0.0003	2.871E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.140E-02	0.0100	0.000E+00	0.0000	1.970E-02	0.0048
Po-210	9.122E-30	0.0000	1.350E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.187E-26	0.0000	0.000E+00	0.0000	1.377E-26	0.0000
Ra-226	3.819E+00	0.9261	1.124E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	7.232E-02	0.0175	0.000E+00	0.0000	3.743E-02	0.0091
Th-230	5.312E-02	0.0129	7.912E-03	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	9.765E-04	0.0002	0.000E+00	0.0000	6.319E-03	0.0015
U-234	1.384E-04	0.0000	6.630E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.695E-04	0.0001	0.000E+00	0.0000	1.252E-03	0.0003
U-238	5.854E-02	0.0142	5.647E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.613E-04	0.0001	0.000E+00	0.0000	1.213E-03	0.0003
Total	3.932E+00	0.9535	1.055E-02	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	1.152E-01	0.0279	0.000E+00	0.0000	6.591E-02	0.0160

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.252E-02	0.0152
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.579E-26	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.930E+00	0.9530
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.833E-02	0.0166
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.323E-03	0.0006
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.058E-02	0.0147
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.124E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Sheep Camp)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.135E-04	0.0000	2.872E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.142E-03	0.0012	0.000E+00	0.0000	1.971E-03	0.0006
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.139E+00	0.8944	1.138E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	9.042E-02	0.0258	0.000E+00	0.0000	4.551E-02	0.0130
Th-230	1.582E-01	0.0451	7.941E-03	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	3.639E-03	0.0010	0.000E+00	0.0000	7.664E-03	0.0022
U-234	1.725E-04	0.0000	5.300E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.149E-04	0.0001	0.000E+00	0.0000	9.961E-04	0.0003
U-238	4.640E-02	0.0132	4.477E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.072E-04	0.0001	0.000E+00	0.0000	9.616E-04	0.0003
Total	3.344E+00	0.9528	1.009E-02	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	9.862E-02	0.0281	0.000E+00	0.0000	5.710E-02	0.0163

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.256E-03	0.0018
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.276E+00	0.9334
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.774E-01	0.0506
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.914E-03	0.0005
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.802E-02	0.0137
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.510E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Sheep Camp)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.579E-07	0.0000	3.997E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.765E-06	0.0000	0.000E+00	0.0000	2.744E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.791E+00	0.7810	6.663E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	5.402E-02	0.0236	0.000E+00	0.0000	2.712E-02	0.0118
Th-230	3.657E-01	0.1595	7.999E-03	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	9.846E-03	0.0043	0.000E+00	0.0000	1.077E-02	0.0047
U-234	4.689E-04	0.0002	2.835E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.205E-04	0.0001	0.000E+00	0.0000	5.254E-04	0.0002
U-238	2.389E-02	0.0104	2.307E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.067E-04	0.0000	0.000E+00	0.0000	4.954E-04	0.0002
Total	2.181E+00	0.9511	9.180E-03	0.0040	0.000E+00	0.0000	0.000E+00	0.0000	6.410E-02	0.0280	0.000E+00	0.0000	3.891E-02	0.0170

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.706E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.756E-24	0.0000	0.000E+00	0.0000	1.872E+00	0.8166
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.179E-27	0.0000	0.000E+00	0.0000	3.943E-01	0.1720
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.869E-16	0.0000	0.000E+00	0.0000	1.398E-03	0.0006
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.834E-21	0.0000	0.000E+00	0.0000	2.472E-02	0.0108
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.870E-16	0.0000	0.000E+00	0.0000	2.293E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Sheep Camp)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.588E-17	0.0000	4.020E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.797E-16	0.0000	0.000E+00	0.0000	2.759E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.510E-01	0.2034	9.341E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	7.574E-03	0.0061	0.000E+00	0.0000	3.802E-03	0.0031
Th-230	5.989E-01	0.4853	8.021E-03	0.0065	0.000E+00	0.0000	0.000E+00	0.0000	1.689E-02	0.0137	0.000E+00	0.0000	1.426E-02	0.0116
U-234	1.433E-03	0.0012	4.775E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.068E-05	0.0000	0.000E+00	0.0000	8.535E-05	0.0001
U-238	2.341E-03	0.0019	2.266E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.050E-05	0.0000	0.000E+00	0.0000	4.864E-05	0.0000
Total	8.537E-01	0.6918	8.184E-03	0.0066	0.000E+00	0.0000	0.000E+00	0.0000	2.453E-02	0.0199	0.000E+00	0.0000	1.819E-02	0.0147

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.472E-15	0.0000	0.000E+00	0.0000	7.347E-15	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.924E-01	0.2369	0.000E+00	0.0000	5.548E-01	0.4496
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.590E-02	0.0291	0.000E+00	0.0000	6.740E-01	0.5462
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.460E-04	0.0007	0.000E+00	0.0000	2.463E-03	0.0020
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.590E-04	0.0003	0.000E+00	0.0000	2.782E-03	0.0023
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.295E-01	0.2670	0.000E+00	0.0000	1.234E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Sheep Camp)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Pb-210+D	Pb-210+D	1.000E+00	3.443E-02	3.332E-02	3.120E-02	2.478E-02	1.284E-02	1.285E-03	1.788E-06	2.478E-16	
Pb-210+D	Po-210	1.000E+00	7.052E-02	1.190E-01	1.205E-01	9.591E-02	4.968E-02	4.971E-03	6.918E-06	7.099E-15	
Pb-210+D	ΣDSR(j)		1.050E-01	1.523E-01	1.517E-01	1.207E-01	6.252E-02	6.256E-03	8.706E-06	7.347E-15	
Pb-210+D1	Pb-210+D1	1.320E-06	5.204E-08	5.036E-08	4.715E-08	3.746E-08	1.940E-08	1.941E-09	2.702E-12	3.615E-22	
Pb-210+D2	Pb-210+D2	1.900E-08	5.312E-09	5.140E-09	4.813E-09	3.823E-09	1.981E-09	1.982E-10	2.758E-13	2.903E-23	
Po-210	Po-210	1.000E+00	6.258E-02	9.884E-03	2.464E-04	6.025E-10	5.579E-26	0.000E+00	0.000E+00	0.000E+00	
Ra-226+D	Ra-226+D	9.996E-01	4.169E+00	4.157E+00	4.134E+00	4.053E+00	3.832E+00	3.149E+00	1.796E+00	2.540E-01	
Ra-226+D	Pb-210+D	9.996E-01	5.856E-04	1.647E-03	3.645E-03	9.601E-03	2.007E-02	2.610E-02	1.565E-02	5.312E-03	
Ra-226+D	Po-210	9.996E-01	8.426E-04	4.031E-03	1.161E-02	3.470E-02	7.534E-02	9.910E-02	5.946E-02	2.952E-01	
Ra-226+D	ΣDSR(j)		4.170E+00	4.163E+00	4.149E+00	4.098E+00	3.928E+00	3.274E+00	1.871E+00	5.545E-01	
Ra-226+D	Ra-226+D	1.319E-06	5.503E-06	5.487E-06	5.457E-06	5.350E-06	5.058E-06	4.156E-06	2.371E-06	3.353E-07	
Ra-226+D	Pb-210+D1	1.319E-06	8.763E-10	2.480E-09	5.499E-09	1.450E-08	3.032E-08	3.944E-08	2.364E-08	7.431E-09	
Ra-226+D	ΣDSR(j)		5.504E-06	5.490E-06	5.462E-06	5.365E-06	5.089E-06	4.195E-06	2.394E-06	3.427E-07	
Ra-226+D	Ra-226+D	1.899E-08	7.921E-08	7.898E-08	7.854E-08	7.701E-08	7.281E-08	5.982E-08	3.412E-08	4.826E-09	
Ra-226+D	Pb-210+D2	1.899E-08	8.414E-11	2.469E-10	5.552E-10	1.474E-09	3.089E-09	4.021E-09	2.411E-09	3.971E-10	
Ra-226+D	ΣDSR(j)		7.929E-08	7.923E-08	7.910E-08	7.849E-08	7.590E-08	6.384E-08	3.653E-08	5.223E-09	
Ra-226+D1	Ra-226+D1	2.100E-04	2.274E-03	2.267E-03	2.255E-03	2.211E-03	2.090E-03	1.717E-03	9.796E-04	1.378E-04	
Ra-226+D1	Pb-210+D	2.100E-04	1.230E-07	3.460E-07	7.657E-07	2.017E-06	4.215E-06	5.482E-06	3.286E-06	1.116E-06	
Ra-226+D1	Po-210	2.100E-04	1.770E-07	8.467E-07	2.439E-06	7.289E-06	1.582E-05	2.081E-05	1.249E-05	6.201E-05	
Ra-226+D1	ΣDSR(j)		2.274E-03	2.269E-03	2.258E-03	2.220E-03	2.110E-03	1.744E-03	9.954E-04	2.009E-04	
Ra-226+D1	Ra-226+D1	2.771E-10	3.001E-09	2.993E-09	2.976E-09	2.918E-09	2.759E-09	2.267E-09	1.293E-09	1.819E-10	
Ra-226+D1	Pb-210+D1	2.771E-10	1.841E-13	5.208E-13	1.155E-12	3.046E-12	6.368E-12	8.284E-12	4.966E-12	1.561E-12	
Ra-226+D1	ΣDSR(j)		3.002E-09	2.994E-09	2.977E-09	2.921E-09	2.765E-09	2.275E-09	1.298E-09	1.834E-10	
Ra-226+D1	Ra-226+D1	3.989E-12	4.320E-11	4.308E-11	4.284E-11	4.201E-11	3.971E-11	3.263E-11	1.861E-11	2.618E-12	
Ra-226+D1	Pb-210+D2	3.989E-12	1.767E-14	5.186E-14	1.166E-13	3.096E-13	6.488E-13	8.446E-13	5.063E-13	8.341E-14	
Ra-226+D1	ΣDSR(j)		4.322E-11	4.313E-11	4.296E-11	4.232E-11	4.036E-11	3.347E-11	1.912E-11	2.701E-12	
Ra-226+D2	Ra-226+D2	1.998E-04	7.323E-04	7.302E-04	7.261E-04	7.120E-04	6.731E-04	5.530E-04	3.155E-04	4.467E-05	
Ra-226+D2	Pb-210+D	1.998E-04	1.170E-07	3.292E-07	7.285E-07	1.919E-06	4.010E-06	5.215E-06	3.127E-06	1.062E-06	
Ra-226+D2	Po-210	1.998E-04	1.684E-07	8.056E-07	2.321E-06	6.935E-06	1.506E-05	1.980E-05	1.188E-05	5.900E-05	
Ra-226+D2	ΣDSR(j)		7.325E-04	7.313E-04	7.292E-04	7.208E-04	6.922E-04	5.781E-04	3.305E-04	1.047E-04	
Ra-226+D2	Ra-226+D2	2.637E-10	9.666E-10	9.639E-10	9.585E-10	9.398E-10	8.885E-10	7.300E-10	4.164E-10	5.896E-11	
Ra-226+D2	Pb-210+D1	2.637E-10	1.751E-13	4.955E-13	1.099E-12	2.898E-12	6.059E-12	7.881E-12	4.725E-12	1.485E-12	
Ra-226+D2	ΣDSR(j)		9.668E-10	9.644E-10	9.596E-10	9.427E-10	8.946E-10	7.379E-10	4.211E-10	6.044E-11	

Summary : Recreator (Sheep Camp)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D2	Ra-226+D2	3.795E-12	1.391E-11	1.387E-11	1.380E-11	1.353E-11	1.279E-11	1.051E-11	5.994E-12	8.486E-13
Ra-226+D2	Pb-210+D2	3.795E-12	1.681E-14	4.934E-14	1.109E-13	2.946E-13	6.173E-13	8.035E-13	4.817E-13	7.936E-14
Ra-226+D2	ΣDSR(j)		1.393E-11	1.392E-11	1.391E-11	1.382E-11	1.341E-11	1.131E-11	6.476E-12	9.280E-13
Ra-226+D3	Ra-226+D3	4.196E-08	4.332E-07	4.320E-07	4.296E-07	4.212E-07	3.982E-07	3.272E-07	1.866E-07	2.626E-08
Ra-226+D3	Pb-210+D	4.196E-08	2.458E-11	6.915E-11	1.530E-10	4.030E-10	8.423E-10	1.095E-09	6.567E-10	2.230E-10
Ra-226+D3	Po-210	4.196E-08	3.537E-11	1.692E-10	4.874E-10	1.457E-09	3.162E-09	4.160E-09	2.496E-09	1.239E-08
Ra-226+D3	ΣDSR(j)		4.333E-07	4.323E-07	4.302E-07	4.231E-07	4.022E-07	3.325E-07	1.898E-07	3.887E-08
Ra-226+D3	Ra-226+D3	5.538E-14	5.719E-13	5.703E-13	5.671E-13	5.560E-13	5.257E-13	4.319E-13	2.464E-13	3.466E-14
Ra-226+D3	Pb-210+D1	5.538E-14	3.678E-17	1.041E-16	2.308E-16	6.087E-16	1.273E-15	1.655E-15	9.924E-16	3.119E-16
Ra-226+D3	ΣDSR(j)		5.719E-13	5.704E-13	5.673E-13	5.566E-13	5.269E-13	4.336E-13	2.474E-13	3.497E-14
Ra-226+D3	Ra-226+D3	7.972E-16	8.231E-15	8.208E-15	8.162E-15	8.003E-15	7.567E-15	6.217E-15	3.546E-15	4.989E-16
Ra-226+D3	Pb-210+D2	7.972E-16	3.532E-18	1.036E-17	2.330E-17	6.188E-17	1.297E-16	1.688E-16	1.012E-16	1.667E-17
Ra-226+D3	ΣDSR(j)		8.235E-15	8.219E-15	8.186E-15	8.065E-15	7.696E-15	6.386E-15	3.647E-15	5.155E-16
Ra-226+D4	Ra-226+D4	2.000E-07	6.841E-09	6.822E-09	6.784E-09	6.652E-09	6.288E-09	5.167E-09	2.947E-09	8.590E-10
Ra-226+D4	Pb-210+D	2.000E-07	1.172E-10	3.296E-10	7.293E-10	1.921E-09	4.015E-09	5.222E-09	3.130E-09	1.063E-09
Ra-226+D4	Po-210	2.000E-07	1.686E-10	8.065E-10	2.323E-09	6.944E-09	1.507E-08	1.983E-08	1.190E-08	5.907E-08
Ra-226+D4	ΣDSR(j)		7.127E-09	7.958E-09	9.836E-09	1.552E-08	2.538E-08	3.022E-08	1.797E-08	6.099E-08
Ra-226+D4	Ra-226+D4	2.640E-13	9.030E-15	9.005E-15	8.954E-15	8.780E-15	8.301E-15	6.820E-15	3.890E-15	1.134E-15
Ra-226+D4	Pb-210+D1	2.640E-13	1.753E-16	4.961E-16	1.100E-15	2.901E-15	6.066E-15	7.891E-15	4.730E-15	1.487E-15
Ra-226+D4	ΣDSR(j)		9.205E-15	9.501E-15	1.005E-14	1.168E-14	1.437E-14	1.471E-14	8.621E-15	2.621E-15
Ra-226+D4	Ra-226+D4	3.800E-15	1.300E-16	1.296E-16	1.289E-16	1.264E-16	1.195E-16	9.817E-17	5.600E-17	1.632E-17
Ra-226+D4	Pb-210+D2	3.800E-15	1.684E-17	4.940E-17	1.111E-16	2.949E-16	6.181E-16	8.045E-16	4.823E-16	7.945E-17
Ra-226+D4	ΣDSR(j)		1.468E-16	1.790E-16	2.400E-16	4.213E-16	7.376E-16	9.027E-16	5.383E-16	9.577E-17
Th-230	Th-230	9.996E-01	1.470E-02	1.470E-02	1.470E-02	1.470E-02	1.469E-02	1.468E-02	1.464E-02	1.452E-02
Th-230	Ra-226+D	9.996E-01	9.030E-04	2.706E-03	6.298E-03	1.871E-02	5.285E-02	1.583E-01	3.664E-01	6.006E-01
Th-230	Pb-210+D	9.996E-01	8.562E-08	5.719E-07	2.875E-06	2.334E-05	1.576E-04	9.184E-04	2.715E-03	5.130E-03
Th-230	Po-210	9.996E-01	9.805E-08	1.102E-06	7.883E-06	7.959E-05	5.786E-04	3.459E-03	1.029E-02	5.329E-02
Th-230	ΣDSR(j)		1.560E-02	1.741E-02	2.101E-02	3.351E-02	6.828E-02	1.773E-01	3.940E-01	6.735E-01
Th-230	Th-230	1.319E-06	1.940E-08	1.940E-08	1.940E-08	1.940E-08	1.939E-08	1.938E-08	1.933E-08	1.917E-08
Th-230	Ra-226+D	1.319E-06	1.192E-09	3.572E-09	8.313E-09	2.470E-08	6.977E-08	2.089E-07	4.836E-07	7.928E-07
Th-230	Pb-210+D1	1.319E-06	1.105E-13	7.934E-13	4.170E-12	3.474E-11	2.367E-10	1.384E-09	4.093E-09	7.663E-09
Th-230	ΣDSR(j)		2.059E-08	2.297E-08	2.772E-08	4.413E-08	8.940E-08	2.297E-07	5.070E-07	8.196E-07
Th-230	Th-230	1.899E-08	2.793E-10	2.792E-10	2.792E-10	2.792E-10	2.792E-10	2.789E-10	2.783E-10	2.759E-10
Th-230	Ra-226+D	1.899E-08	1.716E-11	5.142E-11	1.197E-10	3.555E-10	1.004E-09	3.007E-09	6.961E-09	1.141E-08
Th-230	Pb-210+D2	1.899E-08	1.195E-14	8.321E-14	4.309E-13	3.562E-12	2.420E-11	1.414E-10	4.181E-10	7.397E-10
Th-230	ΣDSR(j)		2.964E-10	3.308E-10	3.993E-10	6.383E-10	1.308E-09	3.427E-09	7.657E-09	1.243E-08

Summary : Recreator (Sheep Camp)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.100E-04	3.087E-06	3.087E-06	3.087E-06	3.087E-06	3.086E-06	3.083E-06	3.076E-06	3.050E-06
Th-230	Ra-226+D1	2.100E-04	4.927E-07	1.476E-06	3.435E-06	1.021E-05	2.883E-05	8.633E-05	1.998E-04	3.275E-04
Th-230	Pb-210+D	2.100E-04	1.798E-11	1.201E-10	6.039E-10	4.903E-09	3.310E-08	1.929E-07	5.703E-07	1.078E-06
Th-230	Po-210	2.100E-04	2.059E-11	2.316E-10	1.656E-09	1.672E-08	1.215E-07	7.266E-07	2.161E-06	1.119E-05
Th-230	ΣDSR(j)		3.580E-06	4.564E-06	6.525E-06	1.331E-05	3.207E-05	9.033E-05	2.056E-04	3.428E-04
Th-230	Th-230	2.771E-10	4.075E-12	4.075E-12	4.075E-12	4.075E-12	4.074E-12	4.070E-12	4.060E-12	4.027E-12
Th-230	Ra-226+D1	2.771E-10	6.503E-13	1.949E-12	4.535E-12	1.347E-11	3.805E-11	1.140E-10	2.638E-10	4.323E-10
Th-230	Pb-210+D1	2.771E-10	2.320E-17	1.667E-16	8.758E-16	7.297E-15	4.971E-14	2.906E-13	8.597E-13	1.610E-12
Th-230	ΣDSR(j)		4.725E-12	6.024E-12	8.610E-12	1.755E-11	4.218E-11	1.183E-10	2.687E-10	4.379E-10
Th-230	Th-230	3.989E-12	5.866E-14	5.865E-14	5.865E-14	5.865E-14	5.863E-14	5.859E-14	5.845E-14	5.796E-14
Th-230	Ra-226+D1	3.989E-12	9.361E-15	2.805E-14	6.527E-14	1.939E-13	5.478E-13	1.640E-12	3.797E-12	6.223E-12
Th-230	Pb-210+D2	3.989E-12	2.510E-18	1.748E-17	9.051E-17	7.482E-16	5.084E-15	2.969E-14	8.782E-14	1.554E-13
Th-230	ΣDSR(j)		6.802E-14	8.672E-14	1.240E-13	2.533E-13	6.115E-13	1.729E-12	3.943E-12	6.436E-12
Th-230	Th-230	1.998E-04	2.937E-06	2.937E-06	2.937E-06	2.937E-06	2.936E-06	2.934E-06	2.927E-06	2.902E-06
Th-230	Ra-226+D2	1.998E-04	1.586E-07	4.754E-07	1.106E-06	3.287E-06	9.284E-06	2.780E-05	6.435E-05	1.055E-04
Th-230	Pb-210+D	1.998E-04	1.711E-11	1.143E-10	5.746E-10	4.665E-09	3.150E-08	1.835E-07	5.426E-07	1.025E-06
Th-230	Po-210	1.998E-04	1.959E-11	2.203E-10	1.575E-09	1.590E-08	1.156E-07	6.913E-07	2.056E-06	1.065E-05
Th-230	ΣDSR(j)		3.096E-06	3.413E-06	4.045E-06	6.244E-06	1.237E-05	3.161E-05	6.988E-05	1.201E-04
Th-230	Th-230	2.637E-10	3.877E-12	3.877E-12	3.877E-12	3.877E-12	3.876E-12	3.872E-12	3.863E-12	3.831E-12
Th-230	Ra-226+D2	2.637E-10	2.094E-13	6.275E-13	1.460E-12	4.338E-12	1.225E-11	3.670E-11	8.495E-11	1.393E-10
Th-230	Pb-210+D1	2.637E-10	2.207E-17	1.586E-16	8.333E-16	6.943E-15	4.730E-14	2.765E-13	8.179E-13	1.531E-12
Th-230	ΣDSR(j)		4.086E-12	4.505E-12	5.338E-12	8.222E-12	1.618E-11	4.085E-11	8.963E-11	1.446E-10
Th-230	Th-230	3.795E-12	5.581E-14	5.581E-14	5.580E-14	5.580E-14	5.579E-14	5.574E-14	5.561E-14	5.514E-14
Th-230	Ra-226+D2	3.795E-12	3.013E-15	9.032E-15	2.102E-14	6.244E-14	1.764E-13	5.282E-13	1.223E-12	2.005E-12
Th-230	Pb-210+D2	3.795E-12	2.388E-18	1.663E-17	8.611E-17	7.119E-16	4.837E-15	2.825E-14	8.355E-14	1.478E-13
Th-230	ΣDSR(j)		5.882E-14	6.485E-14	7.691E-14	1.190E-13	2.370E-13	6.122E-13	1.362E-12	2.208E-12
Th-230	Th-230	4.196E-08	6.169E-10	6.169E-10	6.169E-10	6.169E-10	6.167E-10	6.162E-10	6.147E-10	6.096E-10
Th-230	Ra-226+D3	4.196E-08	9.387E-11	2.813E-10	6.545E-10	1.944E-09	5.493E-09	1.645E-08	3.807E-08	6.240E-08
Th-230	Pb-210+D	4.196E-08	3.594E-15	2.401E-14	1.207E-13	9.798E-13	6.616E-12	3.855E-11	1.140E-10	2.154E-10
Th-230	Po-210	4.196E-08	4.116E-15	4.628E-14	3.309E-13	3.341E-12	2.428E-11	1.452E-10	4.318E-10	2.237E-09
Th-230	ΣDSR(j)		7.108E-10	8.983E-10	1.272E-09	2.566E-09	6.140E-09	1.725E-08	3.923E-08	6.546E-08
Th-230	Th-230	5.538E-14	8.143E-16	8.143E-16	8.143E-16	8.143E-16	8.141E-16	8.134E-16	8.114E-16	8.047E-16
Th-230	Ra-226+D3	5.538E-14	1.239E-16	3.713E-16	8.640E-16	2.567E-15	7.250E-15	2.171E-14	5.026E-14	8.237E-14
Th-230	Pb-210+D1	5.538E-14	4.637E-21	3.330E-20	1.750E-19	1.458E-18	9.935E-18	5.807E-17	1.718E-16	3.217E-16
Th-230	ΣDSR(j)		9.383E-16	1.186E-15	1.678E-15	3.382E-15	8.074E-15	2.258E-14	5.124E-14	8.349E-14
Th-230	Th-230	7.972E-16	1.172E-17	1.172E-17	1.172E-17	1.172E-17	1.172E-17	1.171E-17	1.168E-17	1.158E-17
Th-230	Ra-226+D3	7.972E-16	1.783E-18	5.344E-18	1.244E-17	3.694E-17	1.044E-16	3.125E-16	7.234E-16	1.186E-15
Th-230	Pb-210+D2	7.972E-16	5.016E-22	3.493E-21	1.809E-20	1.495E-19	1.016E-18	5.934E-18	1.755E-17	3.105E-17
Th-230	ΣDSR(j)		1.351E-17	1.707E-17	2.418E-17	4.881E-17	1.171E-16	3.301E-16	7.526E-16	1.228E-15

Summary : Recreator (Sheep Camp)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.000E-07	2.941E-09	2.941E-09	2.941E-09	2.940E-09	2.940E-09	2.937E-09	2.930E-09	2.906E-09
Th-230	Ra-226+D4	2.000E-07	1.395E-12	4.339E-12	1.023E-11	3.060E-11	8.663E-11	2.596E-10	6.011E-10	1.040E-09
Th-230	Pb-210+D	2.000E-07	1.713E-14	1.144E-13	5.753E-13	4.670E-12	3.153E-11	1.838E-10	5.432E-10	1.027E-09
Th-230	Po-210	2.000E-07	1.962E-14	2.206E-13	1.577E-12	1.592E-11	1.158E-10	6.921E-10	2.058E-09	1.066E-08
Th-230	ΣDSR(j)		2.942E-09	2.945E-09	2.953E-09	2.992E-09	3.174E-09	4.073E-09	6.133E-09	1.563E-08
Th-230	Th-230	2.640E-13	3.882E-15	3.882E-15	3.882E-15	3.881E-15	3.880E-15	3.877E-15	3.868E-15	3.836E-15
Th-230	Ra-226+D4	2.640E-13	1.841E-18	5.728E-18	1.351E-17	4.039E-17	1.144E-16	3.427E-16	7.935E-16	1.373E-15
Th-230	Pb-210+D1	2.640E-13	2.210E-20	1.588E-19	8.343E-19	6.951E-18	4.735E-17	2.768E-16	8.189E-16	1.533E-15
Th-230	ΣDSR(j)		3.884E-15	3.888E-15	3.896E-15	3.929E-15	4.042E-15	4.497E-15	5.480E-15	6.741E-15
Th-230	Th-230	3.800E-15	5.587E-17	5.587E-17	5.587E-17	5.587E-17	5.585E-17	5.581E-17	5.567E-17	5.521E-17
Th-230	Ra-226+D4	3.800E-15	2.650E-20	8.245E-20	1.944E-19	5.814E-19	1.646E-18	4.933E-18	1.142E-17	1.976E-17
Th-230	Pb-210+D2	3.800E-15	2.391E-21	1.665E-20	8.622E-20	7.127E-19	4.843E-18	2.828E-17	8.365E-17	1.480E-16
Th-230	ΣDSR(j)		5.590E-17	5.597E-17	5.615E-17	5.716E-17	6.234E-17	8.902E-17	1.507E-16	2.230E-16
U-234	U-234	9.996E-01	2.553E-03	2.544E-03	2.527E-03	2.469E-03	2.310E-03	1.831E-03	9.423E-04	4.593E-04
U-234	Th-230	9.996E-01	6.791E-08	2.027E-07	4.707E-07	1.395E-06	3.920E-06	1.154E-05	2.564E-05	3.888E-05
U-234	Ra-226+D	9.996E-01	2.765E-09	1.933E-08	1.018E-07	8.979E-07	7.269E-06	6.855E-05	4.160E-04	1.435E-03
U-234	Pb-210+D	9.996E-01	1.980E-13	2.866E-12	3.182E-11	7.720E-10	1.562E-08	3.226E-07	2.845E-06	1.631E-05
U-234	Po-210	9.996E-01	1.888E-13	4.629E-12	7.695E-11	2.496E-09	5.621E-08	1.207E-06	1.076E-05	5.119E-04
U-234	ΣDSR(j)		2.553E-03	2.544E-03	2.528E-03	2.472E-03	2.322E-03	1.913E-03	1.398E-03	2.461E-03
U-234	U-234	1.319E-06	3.369E-09	3.358E-09	3.336E-09	3.259E-09	3.050E-09	2.417E-09	1.244E-09	6.063E-10
U-234	Th-230	1.319E-06	8.964E-14	2.675E-13	6.214E-13	1.841E-12	5.174E-12	1.523E-11	3.384E-11	5.132E-11
U-234	Ra-226+D	1.319E-06	3.650E-15	2.552E-14	1.344E-13	1.185E-12	9.595E-12	9.049E-11	5.492E-10	1.894E-09
U-234	Pb-210+D1	1.319E-06	2.493E-19	3.870E-18	4.537E-17	1.141E-15	2.340E-14	4.856E-13	4.287E-12	2.360E-11
U-234	ΣDSR(j)		3.370E-09	3.359E-09	3.337E-09	3.262E-09	3.065E-09	2.523E-09	1.831E-09	2.575E-09
U-234	U-234	1.899E-08	4.850E-11	4.834E-11	4.802E-11	4.692E-11	4.390E-11	3.479E-11	1.790E-11	8.727E-12
U-234	Th-230	1.899E-08	1.290E-15	3.851E-15	8.944E-15	2.650E-14	7.448E-14	2.193E-13	4.871E-13	7.387E-13
U-234	Ra-226+D	1.899E-08	5.254E-17	3.673E-16	1.934E-15	1.706E-14	1.381E-13	1.303E-12	7.905E-12	2.726E-11
U-234	Pb-210+D2	1.899E-08	2.743E-20	4.104E-19	4.715E-18	1.173E-16	2.395E-15	4.963E-14	4.380E-13	1.822E-12
U-234	ΣDSR(j)		4.850E-11	4.834E-11	4.803E-11	4.696E-11	4.411E-11	3.636E-11	2.673E-11	3.855E-11
U-234	U-234	2.100E-04	5.362E-07	5.344E-07	5.308E-07	5.186E-07	4.853E-07	3.846E-07	1.979E-07	9.648E-08
U-234	Th-230	2.100E-04	1.426E-11	4.257E-11	9.887E-11	2.930E-10	8.233E-10	2.424E-09	5.385E-09	8.166E-09
U-234	Ra-226+D1	2.100E-04	1.509E-12	1.055E-11	5.553E-11	4.898E-10	3.965E-09	3.739E-08	2.269E-07	7.813E-07
U-234	Pb-210+D	2.100E-04	4.156E-17	6.018E-16	6.683E-15	1.622E-13	3.281E-12	6.776E-11	5.975E-10	3.426E-09
U-234	Po-210	2.100E-04	3.965E-17	9.722E-16	1.616E-14	5.242E-13	1.181E-11	2.536E-10	2.260E-09	1.075E-07
U-234	ΣDSR(j)		5.362E-07	5.344E-07	5.310E-07	5.194E-07	4.901E-07	4.248E-07	4.331E-07	9.969E-07
U-234	U-234	2.771E-10	7.077E-13	7.054E-13	7.007E-13	6.846E-13	6.406E-13	5.077E-13	2.613E-13	1.273E-13
U-234	Th-230	2.771E-10	1.883E-17	5.620E-17	1.305E-16	3.868E-16	1.087E-15	3.200E-15	7.108E-15	1.078E-14
U-234	Ra-226+D1	2.771E-10	1.992E-18	1.392E-17	7.330E-17	6.465E-16	5.234E-15	4.936E-14	2.995E-13	1.031E-12
U-234	Pb-210+D1	2.771E-10	5.236E-23	8.129E-22	9.529E-21	2.397E-19	4.915E-18	1.020E-16	9.006E-16	4.958E-15
U-234	ΣDSR(j)		7.078E-13	7.055E-13	7.009E-13	6.856E-13	6.469E-13	5.604E-13	5.688E-13	1.174E-12

Summary : Recreator (Sheep Camp)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	3.989E-12	1.019E-14	1.015E-14	1.009E-14	9.854E-15	9.221E-15	7.308E-15	3.760E-15	1.833E-15
U-234	Th-230	3.989E-12	2.710E-19	8.089E-19	1.879E-18	5.567E-18	1.564E-17	4.606E-17	1.023E-16	1.551E-16
U-234	Ra-226+D1	3.989E-12	2.867E-20	2.004E-19	1.055E-18	9.305E-18	7.533E-17	7.105E-16	4.312E-15	1.484E-14
U-234	Pb-210+D2	3.989E-12	5.762E-24	8.620E-23	9.904E-22	2.463E-20	5.030E-19	1.042E-17	9.200E-17	3.827E-16
U-234	ΣDSR(j)		1.019E-14	1.015E-14	1.009E-14	9.869E-15	9.312E-15	8.075E-15	8.266E-15	1.722E-14
U-234	U-234	1.998E-04	5.101E-07	5.084E-07	5.051E-07	4.934E-07	4.617E-07	3.659E-07	1.883E-07	9.179E-08
U-234	Th-230	1.998E-04	1.357E-11	4.050E-11	9.407E-11	2.788E-10	7.833E-10	2.306E-09	5.123E-09	7.769E-09
U-234	Ra-226+D2	1.998E-04	4.857E-13	3.395E-12	1.788E-11	1.577E-10	1.277E-09	1.204E-08	7.308E-08	2.521E-07
U-234	Pb-210+D	1.998E-04	3.954E-17	5.726E-16	6.358E-15	1.543E-13	3.122E-12	6.447E-11	5.685E-10	3.260E-09
U-234	Po-210	1.998E-04	3.773E-17	9.250E-16	1.538E-14	4.987E-13	1.123E-11	2.413E-10	2.150E-09	1.023E-07
U-234	ΣDSR(j)		5.101E-07	5.085E-07	5.052E-07	4.939E-07	4.638E-07	3.806E-07	2.692E-07	4.572E-07
U-234	U-234	2.637E-10	6.734E-13	6.711E-13	6.667E-13	6.514E-13	6.095E-13	4.830E-13	2.486E-13	1.212E-13
U-234	Th-230	2.637E-10	1.791E-17	5.347E-17	1.242E-16	3.680E-16	1.034E-15	3.044E-15	6.763E-15	1.026E-14
U-234	Ra-226+D2	2.637E-10	6.411E-19	4.482E-18	2.360E-17	2.082E-16	1.685E-15	1.589E-14	9.646E-14	3.328E-13
U-234	Pb-210+D1	2.637E-10	4.981E-23	7.734E-22	9.066E-21	2.281E-19	4.676E-18	9.704E-17	8.568E-16	4.717E-15
U-234	ΣDSR(j)		6.734E-13	6.712E-13	6.668E-13	6.519E-13	6.122E-13	5.021E-13	3.526E-13	4.689E-13
U-234	U-234	3.795E-12	9.692E-15	9.660E-15	9.596E-15	9.376E-15	8.773E-15	6.953E-15	3.578E-15	1.744E-15
U-234	Th-230	3.795E-12	2.579E-19	7.696E-19	1.787E-18	5.297E-18	1.488E-17	4.382E-17	9.734E-17	1.476E-16
U-234	Ra-226+D2	3.795E-12	9.228E-21	6.451E-20	3.397E-19	2.997E-18	2.426E-17	2.288E-16	1.389E-15	4.790E-15
U-234	Pb-210+D2	3.795E-12	5.482E-24	8.201E-23	9.423E-22	2.343E-20	4.786E-19	9.917E-18	8.753E-17	3.641E-16
U-234	ΣDSR(j)		9.692E-15	9.661E-15	9.598E-15	9.384E-15	8.812E-15	7.235E-15	5.151E-15	7.046E-15
U-234	U-234	4.196E-08	1.071E-10	1.068E-10	1.061E-10	1.036E-10	9.698E-11	7.686E-11	3.955E-11	1.928E-11
U-234	Th-230	4.196E-08	2.851E-15	8.508E-15	1.976E-14	5.855E-14	1.645E-13	4.844E-13	1.076E-12	1.632E-12
U-234	Ra-226+D3	4.196E-08	2.875E-16	2.009E-15	1.058E-14	9.331E-14	7.554E-13	7.124E-12	4.324E-11	1.489E-10
U-234	Pb-210+D	4.196E-08	8.306E-21	1.203E-19	1.336E-18	3.240E-17	6.557E-16	1.354E-14	1.194E-13	6.847E-13
U-234	Po-210	4.196E-08	7.925E-21	1.943E-19	3.230E-18	1.048E-16	2.359E-15	5.068E-14	4.516E-13	2.149E-11
U-234	ΣDSR(j)		1.071E-10	1.068E-10	1.061E-10	1.038E-10	9.791E-11	8.453E-11	8.444E-11	1.919E-10
U-234	U-234	5.538E-14	1.414E-16	1.410E-16	1.400E-16	1.368E-16	1.280E-16	1.015E-16	5.221E-17	2.545E-17
U-234	Th-230	5.538E-14	3.763E-21	1.123E-20	2.608E-20	7.729E-20	2.172E-19	6.394E-19	1.420E-18	2.154E-18
U-234	Ra-226+D3	5.538E-14	3.795E-22	2.652E-21	1.397E-20	1.232E-19	9.972E-19	9.404E-18	5.707E-17	1.965E-16
U-234	Pb-210+D1	5.538E-14	1.046E-26	1.625E-25	1.904E-24	4.791E-23	9.822E-22	2.038E-20	1.800E-19	9.908E-19
U-234	ΣDSR(j)		1.414E-16	1.410E-16	1.401E-16	1.370E-16	1.292E-16	1.115E-16	1.109E-16	2.251E-16
U-234	U-234	7.972E-16	2.036E-18	2.029E-18	2.016E-18	1.969E-18	1.843E-18	1.460E-18	7.515E-19	3.663E-19
U-234	Th-230	7.972E-16	5.416E-23	1.616E-22	3.754E-22	1.113E-21	3.126E-21	9.204E-21	2.045E-20	3.101E-20
U-234	Ra-226+D3	7.972E-16	5.463E-24	3.818E-23	2.010E-22	1.773E-21	1.435E-20	1.354E-19	8.215E-19	2.828E-18
U-234	Pb-210+D2	7.972E-16	1.151E-27	1.723E-26	1.979E-25	4.922E-24	1.005E-22	2.083E-21	1.839E-20	7.649E-20
U-234	ΣDSR(j)		2.036E-18	2.029E-18	2.016E-18	1.972E-18	1.860E-18	1.607E-18	1.612E-18	3.302E-18

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.000E-07	5.107E-10	5.090E-10	5.057E-10	4.940E-10	4.623E-10	3.664E-10	1.885E-10	9.190E-11
U-234	Th-230	2.000E-07	1.359E-14	4.055E-14	9.419E-14	2.791E-13	7.843E-13	2.309E-12	5.130E-12	7.778E-12
U-234	Ra-226+D4	2.000E-07	4.131E-18	3.035E-17	1.637E-16	1.463E-15	1.190E-14	1.124E-13	6.825E-13	3.129E-12
U-234	Pb-210+D	2.000E-07	3.959E-20	5.733E-19	6.366E-18	1.545E-16	3.126E-15	6.455E-14	5.692E-13	3.264E-12
U-234	Po-210	2.000E-07	3.777E-20	9.261E-19	1.540E-17	4.994E-16	1.125E-14	2.416E-13	2.153E-12	1.024E-10
U-234	ΣDSR(j)		5.107E-10	5.091E-10	5.058E-10	4.943E-10	4.631E-10	3.691E-10	1.971E-10	2.085E-10
U-234	U-234	2.640E-13	6.742E-16	6.719E-16	6.675E-16	6.521E-16	6.102E-16	4.836E-16	2.489E-16	1.213E-16
U-234	Th-230	2.640E-13	1.794E-20	5.353E-20	1.243E-19	3.684E-19	1.035E-18	3.048E-18	6.771E-18	1.027E-17
U-234	Ra-226+D4	2.640E-13	5.452E-24	4.006E-23	2.161E-22	1.932E-21	1.571E-20	1.484E-19	9.010E-19	4.131E-18
U-234	Pb-210+D1	2.640E-13	4.987E-26	7.744E-25	9.077E-24	2.284E-22	4.682E-21	9.716E-20	8.578E-19	4.723E-18
U-234	ΣDSR(j)		6.742E-16	6.720E-16	6.676E-16	6.525E-16	6.113E-16	4.869E-16	2.574E-16	1.404E-16
U-234	U-234	3.800E-15	9.704E-18	9.672E-18	9.608E-18	9.387E-18	8.783E-18	6.961E-18	3.582E-18	1.746E-18
U-234	Th-230	3.800E-15	2.582E-22	7.705E-22	1.790E-21	5.303E-21	1.490E-20	4.387E-20	9.746E-20	1.478E-19
U-234	Ra-226+D4	3.800E-15	7.848E-26	5.766E-25	3.111E-24	2.781E-23	2.261E-22	2.136E-21	1.297E-20	5.946E-20
U-234	Pb-210+D2	3.800E-15	5.488E-27	8.211E-26	9.434E-25	2.346E-23	4.792E-22	9.930E-21	8.764E-20	3.646E-19
U-234	ΣDSR(j)		9.704E-18	9.673E-18	9.610E-18	9.392E-18	8.799E-18	7.017E-18	3.780E-18	2.318E-18
U-238	U-238	5.450E-07	1.203E-09	1.199E-09	1.191E-09	1.163E-09	1.089E-09	8.630E-10	4.443E-10	2.245E-10
U-238+D	U-238+D	1.599E-03	5.346E-03	5.328E-03	5.293E-03	5.172E-03	4.840E-03	3.836E-03	1.975E-03	1.940E-04
U-238+D	U-234	1.599E-03	5.762E-12	1.724E-11	3.996E-11	1.171E-10	3.184E-10	8.314E-10	1.280E-09	2.079E-09
U-238+D	Th-230	1.599E-03	1.026E-16	7.129E-16	3.743E-15	3.293E-14	2.656E-13	2.475E-12	1.457E-11	4.645E-11
U-238+D	Ra-226+D	1.599E-03	3.122E-18	4.675E-17	5.431E-16	1.417E-14	3.307E-13	1.004E-11	1.699E-10	1.472E-09
U-238+D	Pb-210+D	1.599E-03	1.787E-22	5.411E-21	1.300E-19	9.333E-18	5.580E-16	3.983E-14	1.072E-12	2.159E-11
U-238+D	Po-210	1.599E-03	1.461E-22	7.584E-21	2.819E-19	2.870E-17	1.969E-15	1.482E-13	4.048E-12	9.804E-10
U-238+D	ΣDSR(j)		5.346E-03	5.328E-03	5.293E-03	5.172E-03	4.840E-03	3.836E-03	1.975E-03	1.940E-04
U-238+D	U-238+D	2.111E-09	7.057E-09	7.034E-09	6.987E-09	6.827E-09	6.388E-09	5.064E-09	2.607E-09	2.561E-10
U-238+D	U-234	2.111E-09	7.606E-18	2.275E-17	5.274E-17	1.546E-16	4.202E-16	1.098E-15	1.689E-15	2.744E-15
U-238+D	Th-230	2.111E-09	1.354E-22	9.411E-22	4.941E-21	4.346E-20	3.505E-19	3.267E-18	1.923E-17	6.131E-17
U-238+D	Ra-226+D	2.111E-09	4.120E-24	6.171E-23	7.168E-22	1.870E-20	4.365E-19	1.325E-17	2.243E-16	1.943E-15
U-238+D	Pb-210+D1	2.111E-09	2.215E-28	7.158E-27	1.826E-25	1.371E-23	8.338E-22	5.991E-20	1.616E-18	3.055E-17
U-238+D	ΣDSR(j)		7.057E-09	7.034E-09	6.987E-09	6.827E-09	6.388E-09	5.064E-09	2.607E-09	2.561E-10
U-238+D	U-238+D	3.039E-11	1.016E-10	1.012E-10	1.006E-10	9.826E-11	9.195E-11	7.289E-11	3.753E-11	3.686E-12
U-238+D	U-234	3.039E-11	1.095E-19	3.275E-19	7.592E-19	2.225E-18	6.049E-18	1.580E-17	2.431E-17	3.950E-17
U-238+D	Th-230	3.039E-11	1.949E-24	1.355E-23	7.112E-23	6.256E-22	5.046E-21	4.703E-20	2.768E-19	8.825E-19
U-238+D	Ra-226+D	3.039E-11	5.931E-26	8.882E-25	1.032E-23	2.692E-22	6.283E-21	1.908E-19	3.229E-18	2.797E-17
U-238+D	Pb-210+D2	3.039E-11	2.475E-29	7.665E-28	1.908E-26	1.411E-24	8.540E-23	6.124E-21	1.651E-19	1.930E-18
U-238+D	ΣDSR(j)		1.016E-10	1.012E-10	1.006E-10	9.826E-11	9.195E-11	7.289E-11	3.753E-11	3.687E-12

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	3.359E-07	1.123E-06	1.119E-06	1.112E-06	1.086E-06	1.017E-06	8.058E-07	4.149E-07	4.075E-08
U-238+D	U-234	3.359E-07	1.210E-15	3.620E-15	8.393E-15	2.460E-14	6.687E-14	1.746E-13	2.688E-13	4.366E-13
U-238+D	Th-230	3.359E-07	2.155E-20	1.498E-19	7.862E-19	6.916E-18	5.578E-17	5.199E-16	3.060E-15	9.756E-15
U-238+D	Ra-226+D1	3.359E-07	1.704E-21	2.551E-20	2.963E-19	7.729E-18	1.804E-16	5.477E-15	9.269E-14	8.003E-13
U-238+D	Pb-210+D	3.359E-07	3.749E-26	1.136E-24	2.731E-23	1.960E-21	1.172E-19	8.367E-18	2.252E-16	4.535E-15
U-238+D	Po-210	3.359E-07	3.069E-26	1.593E-24	5.922E-23	6.027E-21	4.136E-19	3.112E-17	8.502E-16	2.059E-13
U-238+D	ΣDSR(j)		1.123E-06	1.119E-06	1.112E-06	1.086E-06	1.017E-06	8.058E-07	4.149E-07	4.076E-08
U-238+D	U-238+D	4.434E-13	1.482E-12	1.477E-12	1.468E-12	1.434E-12	1.342E-12	1.064E-12	5.476E-13	5.379E-14
U-238+D	U-234	4.434E-13	1.598E-21	4.779E-21	1.108E-20	3.247E-20	8.827E-20	2.305E-19	3.548E-19	5.764E-19
U-238+D	Th-230	4.434E-13	2.845E-26	1.977E-25	1.038E-24	9.130E-24	7.363E-23	6.863E-22	4.039E-21	1.288E-20
U-238+D	Ra-226+D1	4.434E-13	2.249E-27	3.367E-26	3.911E-25	1.020E-23	2.381E-22	7.229E-21	1.224E-19	1.056E-18
U-238+D	Pb-210+D1	4.434E-13	4.653E-32	1.503E-30	3.835E-29	2.880E-27	1.751E-25	1.258E-23	3.394E-22	6.416E-21
U-238+D	ΣDSR(j)		1.482E-12	1.477E-12	1.468E-12	1.434E-12	1.342E-12	1.064E-12	5.476E-13	5.380E-14
U-238+D	U-238+D	6.383E-15	2.134E-14	2.127E-14	2.112E-14	2.064E-14	1.931E-14	1.531E-14	7.883E-15	7.743E-16
U-238+D	U-234	6.383E-15	2.300E-23	6.879E-23	1.595E-22	4.674E-22	1.271E-21	3.318E-21	5.107E-21	8.296E-21
U-238+D	Th-230	6.383E-15	4.094E-28	2.845E-27	1.494E-26	1.314E-25	1.060E-24	9.878E-24	5.813E-23	1.854E-22
U-238+D	Ra-226+D1	6.383E-15	3.237E-29	4.846E-28	5.629E-27	1.469E-25	3.427E-24	1.041E-22	1.761E-21	1.521E-20
U-238+D	Pb-210+D2	6.383E-15	5.198E-33	1.610E-31	4.007E-30	2.964E-28	1.794E-26	1.286E-24	3.468E-23	4.054E-22
U-238+D	ΣDSR(j)		2.134E-14	2.127E-14	2.112E-14	2.064E-14	1.931E-14	1.531E-14	7.883E-15	7.743E-16
U-238+D	U-238+D	3.196E-07	1.068E-06	1.065E-06	1.058E-06	1.034E-06	9.671E-07	7.666E-07	3.947E-07	3.877E-08
U-238+D	U-234	3.196E-07	1.152E-15	3.445E-15	7.985E-15	2.341E-14	6.362E-14	1.662E-13	2.557E-13	4.154E-13
U-238+D	Th-230	3.196E-07	2.050E-20	1.425E-19	7.480E-19	6.580E-18	5.307E-17	4.946E-16	2.911E-15	9.282E-15
U-238+D	Ra-226+D2	3.196E-07	5.482E-22	8.211E-21	9.539E-20	2.489E-18	5.808E-17	1.764E-15	2.985E-14	2.588E-13
U-238+D	Pb-210+D	3.196E-07	3.567E-26	1.081E-24	2.598E-23	1.865E-21	1.115E-19	7.960E-18	2.143E-16	4.315E-15
U-238+D	Po-210	3.196E-07	2.920E-26	1.516E-24	5.634E-23	5.735E-21	3.936E-19	2.961E-17	8.089E-16	1.959E-13
U-238+D	ΣDSR(j)		1.068E-06	1.065E-06	1.058E-06	1.034E-06	9.671E-07	7.666E-07	3.947E-07	3.877E-08
U-238+D	U-238+D	4.219E-13	1.410E-12	1.406E-12	1.396E-12	1.364E-12	1.277E-12	1.012E-12	5.210E-13	5.118E-14
U-238+D	U-234	4.219E-13	1.520E-21	4.547E-21	1.054E-20	3.090E-20	8.398E-20	2.193E-19	3.376E-19	5.484E-19
U-238+D	Th-230	4.219E-13	2.706E-26	1.881E-25	9.874E-25	8.686E-24	7.005E-23	6.529E-22	3.843E-21	1.225E-20
U-238+D	Ra-226+D2	4.219E-13	7.236E-28	1.084E-26	1.259E-25	3.285E-24	7.667E-23	2.328E-21	3.940E-20	3.416E-19
U-238+D	Pb-210+D1	4.219E-13	4.427E-32	1.430E-30	3.648E-29	2.740E-27	1.666E-25	1.197E-23	3.229E-22	6.105E-21
U-238+D	ΣDSR(j)		1.410E-12	1.406E-12	1.396E-12	1.364E-12	1.277E-12	1.012E-12	5.210E-13	5.118E-14
U-238+D	U-238+D	6.073E-15	2.030E-14	2.023E-14	2.010E-14	1.964E-14	1.838E-14	1.457E-14	7.500E-15	7.367E-16
U-238+D	U-234	6.073E-15	2.188E-23	6.545E-23	1.517E-22	4.447E-22	1.209E-21	3.157E-21	4.859E-21	7.893E-21
U-238+D	Th-230	6.073E-15	3.896E-28	2.707E-27	1.421E-26	1.250E-25	1.008E-24	9.398E-24	5.531E-23	1.764E-22
U-238+D	Ra-226+D2	6.073E-15	1.042E-29	1.560E-28	1.812E-27	4.729E-26	1.104E-24	3.351E-23	5.672E-22	4.917E-21
U-238+D	Pb-210+D2	6.073E-15	4.945E-33	1.532E-31	3.813E-30	2.820E-28	1.707E-26	1.224E-24	3.299E-23	3.857E-22
U-238+D	ΣDSR(j)		2.030E-14	2.023E-14	2.010E-14	1.964E-14	1.838E-14	1.457E-14	7.500E-15	7.367E-16

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	6.713E-11	2.244E-10	2.237E-10	2.222E-10	2.171E-10	2.031E-10	1.610E-10	8.291E-11	8.144E-12
U-238+D	U-234	6.713E-11	2.419E-19	7.235E-19	1.677E-18	4.916E-18	1.336E-17	3.490E-17	5.371E-17	8.726E-17
U-238+D	Th-230	6.713E-11	4.307E-24	2.993E-23	1.571E-22	1.382E-21	1.115E-20	1.039E-19	6.114E-19	1.950E-18
U-238+D	Ra-226+D3	6.713E-11	3.246E-25	4.859E-24	5.644E-23	1.473E-21	3.436E-20	1.043E-18	1.766E-17	1.525E-16
U-238+D	Pb-210+D	6.713E-11	7.492E-30	2.271E-28	5.457E-27	3.917E-25	2.342E-23	1.672E-21	4.501E-20	9.063E-19
U-238+D	Po-210	6.713E-11	6.134E-30	3.183E-28	1.183E-26	1.205E-24	8.266E-23	6.220E-21	1.699E-19	4.115E-17
U-238+D	ΣDSR(j)		2.244E-10	2.237E-10	2.222E-10	2.171E-10	2.031E-10	1.610E-10	8.291E-11	8.144E-12
U-238+D	U-238+D	8.862E-17	2.962E-16	2.952E-16	2.933E-16	2.865E-16	2.681E-16	2.126E-16	1.094E-16	1.075E-17
U-238+D	U-234	8.862E-17	3.193E-25	9.550E-25	2.214E-24	6.489E-24	1.764E-23	4.607E-23	7.090E-23	1.152E-22
U-238+D	Th-230	8.862E-17	5.685E-30	3.950E-29	2.074E-28	1.824E-27	1.471E-26	1.371E-25	8.071E-25	2.574E-24
U-238+D	Ra-226+D3	8.862E-17	4.284E-31	6.414E-30	7.451E-29	1.944E-27	4.536E-26	1.377E-24	2.331E-23	2.013E-22
U-238+D	Pb-210+D1	8.862E-17	9.298E-36	3.004E-34	7.663E-33	5.755E-31	3.500E-29	2.515E-27	6.783E-26	1.282E-24
U-238+D	ΣDSR(j)		2.962E-16	2.952E-16	2.933E-16	2.865E-16	2.681E-16	2.126E-16	1.094E-16	1.075E-17
U-238+D	U-238+D	1.276E-18	4.264E-18	4.250E-18	4.222E-18	4.125E-18	3.860E-18	3.059E-18	1.575E-18	1.547E-19
U-238+D	U-234	1.276E-18	4.596E-27	1.375E-26	3.187E-26	9.341E-26	2.539E-25	6.631E-25	1.021E-24	1.658E-24
U-238+D	Th-230	1.276E-18	8.182E-32	5.686E-31	2.985E-30	2.626E-29	2.118E-28	1.974E-27	1.162E-26	3.704E-26
U-238+D	Ra-226+D3	1.276E-18	6.167E-33	9.233E-32	1.072E-30	2.798E-29	6.529E-28	1.983E-26	3.356E-25	2.897E-24
U-238+D	Pb-210+D2	1.276E-18	1.039E-36	3.218E-35	8.008E-34	5.924E-32	3.584E-30	2.571E-28	6.929E-27	8.101E-26
U-238+D	ΣDSR(j)		4.264E-18	4.250E-18	4.222E-18	4.125E-18	3.860E-18	3.059E-18	1.575E-18	1.547E-19
U-238+D	U-238+D	3.200E-10	1.070E-09	1.066E-09	1.059E-09	1.035E-09	9.683E-10	7.675E-10	3.952E-10	3.882E-11
U-238+D	U-234	3.200E-10	1.153E-18	3.449E-18	7.995E-18	2.343E-17	6.370E-17	1.664E-16	2.560E-16	4.159E-16
U-238+D	Th-230	3.200E-10	2.053E-23	1.426E-22	7.489E-22	6.588E-21	5.313E-20	4.952E-19	2.915E-18	9.293E-18
U-238+D	Ra-226+D4	3.200E-10	4.544E-27	7.210E-26	8.655E-25	2.302E-23	5.407E-22	1.646E-20	2.788E-19	4.034E-18
U-238+D	Pb-210+D	3.200E-10	3.571E-29	1.082E-27	2.601E-26	1.867E-24	1.116E-22	7.970E-21	2.146E-19	4.320E-18
U-238+D	Po-210	3.200E-10	2.924E-29	1.517E-27	5.641E-26	5.742E-24	3.940E-22	2.965E-20	8.099E-19	1.962E-16
U-238+D	ΣDSR(j)		1.070E-09	1.066E-09	1.059E-09	1.035E-09	9.683E-10	7.675E-10	3.952E-10	3.882E-11
U-238+D	U-238+D	4.224E-16	1.412E-15	1.407E-15	1.398E-15	1.366E-15	1.278E-15	1.013E-15	5.217E-16	5.124E-17
U-238+D	U-234	4.224E-16	1.522E-24	4.552E-24	1.055E-23	3.093E-23	8.408E-23	2.196E-22	3.380E-22	5.490E-22
U-238+D	Th-230	4.224E-16	2.710E-29	1.883E-28	9.885E-28	8.697E-27	7.014E-26	6.537E-25	3.847E-24	1.227E-23
U-238+D	Ra-226+D4	4.224E-16	5.998E-33	9.518E-32	1.142E-30	3.039E-29	7.137E-28	2.173E-26	3.680E-25	5.325E-24
U-238+D	Pb-210+D1	4.224E-16	4.432E-35	1.432E-33	3.653E-32	2.743E-30	1.668E-28	1.199E-26	3.233E-25	6.112E-24
U-238+D	ΣDSR(j)		1.412E-15	1.407E-15	1.398E-15	1.366E-15	1.278E-15	1.013E-15	5.217E-16	5.124E-17
U-238+D	U-238+D	6.080E-18	2.032E-17	2.026E-17	2.012E-17	1.966E-17	1.840E-17	1.458E-17	7.509E-18	7.376E-19
U-238+D	U-234	6.080E-18	2.191E-26	6.553E-26	1.519E-25	4.452E-25	1.210E-24	3.161E-24	4.865E-24	7.903E-24
U-238+D	Th-230	6.080E-18	3.900E-31	2.710E-30	1.423E-29	1.252E-28	1.010E-27	9.409E-27	5.538E-26	1.766E-25
U-238+D	Ra-226+D4	6.080E-18	8.633E-35	1.370E-33	1.644E-32	4.374E-31	1.027E-29	3.127E-28	5.297E-27	7.664E-26
U-238+D	Pb-210+D2	6.080E-18	4.951E-36	1.534E-34	3.817E-33	2.824E-31	1.709E-29	1.225E-27	3.303E-26	3.862E-25
U-238+D	ΣDSR(j)		2.032E-17	2.026E-17	2.012E-17	1.966E-17	1.840E-17	1.458E-17	7.509E-18	7.376E-19

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	9.980E-01	6.155E-02	6.134E-02	6.094E-02	5.954E-02	5.571E-02	4.416E-02	2.274E-02	2.584E-03
U-238+D1	U-234	9.980E-01	3.596E-09	1.076E-08	2.493E-08	7.308E-08	1.987E-07	5.188E-07	7.985E-07	1.297E-06
U-238+D1	Th-230	9.980E-01	6.402E-14	4.449E-13	2.336E-12	2.055E-11	1.657E-10	1.544E-09	9.090E-09	2.898E-08
U-238+D1	Ra-226+D	9.980E-01	1.948E-15	2.917E-14	3.389E-13	8.842E-12	2.063E-10	6.265E-09	1.060E-07	9.187E-07
U-238+D1	Pb-210+D	9.980E-01	1.115E-19	3.376E-18	8.112E-17	5.824E-15	3.482E-13	2.486E-11	6.692E-10	1.347E-08
U-238+D1	Po-210	9.980E-01	9.119E-20	4.732E-18	1.759E-16	1.791E-14	1.229E-12	9.246E-11	2.526E-09	6.117E-07
U-238+D1	ΣDSR(j)		6.155E-02	6.134E-02	6.094E-02	5.954E-02	5.571E-02	4.416E-02	2.274E-02	2.586E-03
U-238+D1	U-238+D1	1.317E-06	8.124E-08	8.097E-08	8.044E-08	7.859E-08	7.354E-08	5.829E-08	3.001E-08	3.410E-09
U-238+D1	U-234	1.317E-06	4.746E-15	1.420E-14	3.291E-14	9.647E-14	2.622E-13	6.848E-13	1.054E-12	1.712E-12
U-238+D1	Th-230	1.317E-06	8.451E-20	5.872E-19	3.083E-18	2.712E-17	2.187E-16	2.039E-15	1.200E-14	3.826E-14
U-238+D1	Ra-226+D	1.317E-06	2.571E-21	3.851E-20	4.473E-19	1.167E-17	2.724E-16	8.270E-15	1.400E-13	1.213E-12
U-238+D1	Pb-210+D1	1.317E-06	1.382E-25	4.466E-24	1.139E-22	8.555E-21	5.203E-19	3.739E-17	1.008E-15	1.906E-14
U-238+D1	ΣDSR(j)		8.124E-08	8.097E-08	8.044E-08	7.859E-08	7.354E-08	5.830E-08	3.002E-08	3.413E-09
U-238+D1	U-238+D1	1.896E-08	1.169E-09	1.166E-09	1.158E-09	1.131E-09	1.059E-09	8.391E-10	4.320E-10	4.909E-11
U-238+D1	U-234	1.896E-08	6.832E-17	2.044E-16	4.737E-16	1.389E-15	3.774E-15	9.858E-15	1.517E-14	2.465E-14
U-238+D1	Th-230	1.896E-08	1.216E-21	8.453E-21	4.438E-20	3.904E-19	3.148E-18	2.935E-17	1.727E-16	5.507E-16
U-238+D1	Ra-226+D	1.896E-08	3.701E-23	5.542E-22	6.439E-21	1.680E-19	3.920E-18	1.190E-16	2.015E-15	1.745E-14
U-238+D1	Pb-210+D2	1.896E-08	1.544E-26	4.783E-25	1.190E-23	8.807E-22	5.329E-20	3.821E-18	1.030E-16	1.204E-15
U-238+D1	ΣDSR(j)		1.169E-09	1.166E-09	1.158E-09	1.131E-09	1.059E-09	8.391E-10	4.320E-10	4.913E-11
U-238+D1	U-238+D1	2.096E-04	1.293E-05	1.288E-05	1.280E-05	1.251E-05	1.170E-05	9.276E-06	4.776E-06	5.427E-07
U-238+D1	U-234	2.096E-04	7.553E-13	2.259E-12	5.237E-12	1.535E-11	4.173E-11	1.090E-10	1.677E-10	2.725E-10
U-238+D1	Th-230	2.096E-04	1.345E-17	9.344E-17	4.906E-16	4.316E-15	3.481E-14	3.244E-13	1.909E-12	6.088E-12
U-238+D1	Ra-226+D1	2.096E-04	1.063E-18	1.592E-17	1.849E-16	4.823E-15	1.125E-13	3.417E-12	5.784E-11	4.994E-10
U-238+D1	Pb-210+D	2.096E-04	2.339E-23	7.090E-22	1.704E-20	1.223E-18	7.313E-17	5.221E-15	1.406E-13	2.830E-12
U-238+D1	Po-210	2.096E-04	1.915E-23	9.940E-22	3.695E-20	3.761E-18	2.581E-16	1.942E-14	5.305E-13	1.285E-10
U-238+D1	ΣDSR(j)		1.293E-05	1.288E-05	1.280E-05	1.251E-05	1.170E-05	9.276E-06	4.776E-06	5.436E-07
U-238+D1	U-238+D1	2.767E-10	1.706E-11	1.701E-11	1.690E-11	1.651E-11	1.545E-11	1.224E-11	6.304E-12	7.163E-13
U-238+D1	U-234	2.767E-10	9.970E-19	2.982E-18	6.913E-18	2.026E-17	5.508E-17	1.438E-16	2.214E-16	3.597E-16
U-238+D1	Th-230	2.767E-10	1.775E-23	1.233E-22	6.476E-22	5.697E-21	4.594E-20	4.282E-19	2.520E-18	8.036E-18
U-238+D1	Ra-226+D1	2.767E-10	1.403E-24	2.101E-23	2.440E-22	6.366E-21	1.486E-19	4.511E-18	7.635E-17	6.592E-16
U-238+D1	Pb-210+D1	2.767E-10	2.903E-29	9.381E-28	2.393E-26	1.797E-24	1.093E-22	7.853E-21	2.118E-19	4.004E-18
U-238+D1	ΣDSR(j)		1.706E-11	1.701E-11	1.690E-11	1.651E-11	1.545E-11	1.224E-11	6.305E-12	7.174E-13
U-238+D1	U-238+D1	3.983E-12	2.456E-13	2.448E-13	2.432E-13	2.376E-13	2.223E-13	1.762E-13	9.075E-14	1.031E-14
U-238+D1	U-234	3.983E-12	1.435E-20	4.292E-20	9.950E-20	2.917E-19	7.928E-19	2.071E-18	3.187E-18	5.177E-18
U-238+D1	Th-230	3.983E-12	2.555E-25	1.775E-24	9.321E-24	8.200E-23	6.613E-22	6.164E-21	3.628E-20	1.157E-19
U-238+D1	Ra-226+D1	3.983E-12	2.020E-26	3.024E-25	3.512E-24	9.164E-23	2.138E-21	6.493E-20	1.099E-18	9.488E-18
U-238+D1	Pb-210+D2	3.983E-12	3.243E-30	1.005E-28	2.501E-27	1.850E-25	1.119E-23	8.027E-22	2.164E-20	2.530E-19
U-238+D1	ΣDSR(j)		2.456E-13	2.448E-13	2.432E-13	2.376E-13	2.223E-13	1.762E-13	9.075E-14	1.033E-14

Summary : Recreator (Sheep Camp)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.994E-04	1.230E-05	1.226E-05	1.218E-05	1.190E-05	1.113E-05	8.825E-06	4.544E-06	5.163E-07
U-238+D1	U-234	1.994E-04	7.186E-13	2.149E-12	4.983E-12	1.461E-11	3.970E-11	1.037E-10	1.596E-10	2.592E-10
U-238+D1	Th-230	1.994E-04	1.279E-17	8.890E-17	4.667E-16	4.106E-15	3.312E-14	3.086E-13	1.816E-12	5.792E-12
U-238+D1	Ra-226+D2	1.994E-04	3.421E-19	5.123E-18	5.952E-17	1.553E-15	3.624E-14	1.101E-12	1.863E-11	1.615E-10
U-238+D1	Pb-210+D	1.994E-04	2.226E-23	6.745E-22	1.621E-20	1.164E-18	6.958E-17	4.967E-15	1.337E-13	2.692E-12
U-238+D1	Po-210	1.994E-04	1.822E-23	9.457E-22	3.516E-20	3.578E-18	2.456E-16	1.848E-14	5.048E-13	1.223E-10
U-238+D1	ΣDSR(j)		1.230E-05	1.226E-05	1.218E-05	1.190E-05	1.113E-05	8.826E-06	4.544E-06	5.169E-07
U-238+D1	U-238+D1	2.633E-10	1.624E-11	1.618E-11	1.607E-11	1.571E-11	1.470E-11	1.165E-11	5.998E-12	6.815E-13
U-238+D1	U-234	2.633E-10	9.485E-19	2.837E-18	6.577E-18	1.928E-17	5.240E-17	1.369E-16	2.106E-16	3.422E-16
U-238+D1	Th-230	2.633E-10	1.689E-23	1.174E-22	6.161E-22	5.420E-21	4.371E-20	4.074E-19	2.398E-18	7.645E-18
U-238+D1	Ra-226+D2	2.633E-10	4.515E-25	6.763E-24	7.857E-23	2.050E-21	4.784E-20	1.453E-18	2.459E-17	2.132E-16
U-238+D1	Pb-210+D1	2.633E-10	2.762E-29	8.925E-28	2.277E-26	1.710E-24	1.040E-22	7.471E-21	2.015E-19	3.809E-18
U-238+D1	ΣDSR(j)		1.624E-11	1.618E-11	1.607E-11	1.571E-11	1.470E-11	1.165E-11	5.998E-12	6.821E-13
U-238+D1	U-238+D1	3.789E-12	2.337E-13	2.329E-13	2.314E-13	2.261E-13	2.115E-13	1.677E-13	8.634E-14	9.810E-15
U-238+D1	U-234	3.789E-12	1.365E-20	4.084E-20	9.467E-20	2.775E-19	7.543E-19	1.970E-18	3.032E-18	4.925E-18
U-238+D1	Th-230	3.789E-12	2.431E-25	1.689E-24	8.868E-24	7.802E-23	6.292E-22	5.864E-21	3.451E-20	1.100E-19
U-238+D1	Ra-226+D2	3.789E-12	6.500E-27	9.735E-26	1.131E-24	2.951E-23	6.886E-22	2.091E-20	3.539E-19	3.068E-18
U-238+D1	Pb-210+D2	3.789E-12	3.086E-30	9.559E-29	2.379E-27	1.760E-25	1.065E-23	7.637E-22	2.059E-20	2.407E-19
U-238+D1	ΣDSR(j)		2.337E-13	2.329E-13	2.314E-13	2.261E-13	2.115E-13	1.677E-13	8.634E-14	9.818E-15
U-238+D1	U-238+D1	4.189E-08	2.583E-09	2.575E-09	2.558E-09	2.499E-09	2.339E-09	1.854E-09	9.544E-10	1.084E-10
U-238+D1	U-234	4.189E-08	1.509E-16	4.515E-16	1.047E-15	3.068E-15	8.339E-15	2.178E-14	3.352E-14	5.445E-14
U-238+D1	Th-230	4.189E-08	2.687E-21	1.867E-20	9.804E-20	8.625E-19	6.956E-18	6.483E-17	3.815E-16	1.217E-15
U-238+D1	Ra-226+D3	4.189E-08	2.025E-22	3.032E-21	3.522E-20	9.189E-19	2.144E-17	6.511E-16	1.102E-14	9.516E-14
U-238+D1	Pb-210+D	4.189E-08	4.675E-27	1.417E-25	3.405E-24	2.444E-22	1.461E-20	1.043E-18	2.809E-17	5.655E-16
U-238+D1	Po-210	4.189E-08	3.827E-27	1.986E-25	7.385E-24	7.516E-22	5.158E-20	3.881E-18	1.060E-16	2.568E-14
U-238+D1	ΣDSR(j)		2.583E-09	2.575E-09	2.558E-09	2.499E-09	2.339E-09	1.854E-09	9.545E-10	1.086E-10
U-238+D1	U-238+D1	5.530E-14	3.410E-15	3.399E-15	3.376E-15	3.299E-15	3.087E-15	2.447E-15	1.260E-15	1.432E-16
U-238+D1	U-234	5.530E-14	1.992E-22	5.959E-22	1.381E-21	4.049E-21	1.101E-20	2.875E-20	4.424E-20	7.187E-20
U-238+D1	Th-230	5.530E-14	3.547E-27	2.465E-26	1.294E-25	1.138E-24	9.181E-24	8.558E-23	5.036E-22	1.606E-21
U-238+D1	Ra-226+D3	5.530E-14	2.673E-28	4.003E-27	4.649E-26	1.213E-24	2.830E-23	8.595E-22	1.455E-20	1.256E-19
U-238+D1	Pb-210+D1	5.530E-14	5.802E-33	1.875E-31	4.782E-30	3.591E-28	2.184E-26	1.569E-24	4.232E-23	8.001E-22
U-238+D1	ΣDSR(j)		3.410E-15	3.399E-15	3.376E-15	3.299E-15	3.087E-15	2.447E-15	1.260E-15	1.434E-16
U-238+D1	U-238+D1	7.959E-16	4.909E-17	4.892E-17	4.860E-17	4.748E-17	4.443E-17	3.522E-17	1.813E-17	2.061E-18
U-238+D1	U-234	7.959E-16	2.868E-24	8.578E-24	1.988E-23	5.829E-23	1.584E-22	4.138E-22	6.368E-22	1.035E-21
U-238+D1	Th-230	7.959E-16	5.106E-29	3.548E-28	1.863E-27	1.639E-26	1.322E-25	1.232E-24	7.249E-24	2.311E-23
U-238+D1	Ra-226+D3	7.959E-16	3.848E-30	5.761E-29	6.692E-28	1.746E-26	4.074E-25	1.237E-23	2.094E-22	1.808E-21
U-238+D1	Pb-210+D2	7.959E-16	6.482E-34	2.008E-32	4.997E-31	3.697E-29	2.237E-27	1.604E-25	4.324E-24	5.055E-23
U-238+D1	ΣDSR(j)		4.909E-17	4.892E-17	4.860E-17	4.748E-17	4.443E-17	3.522E-17	1.814E-17	2.063E-18

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.997E-07	1.231E-08	1.227E-08	1.219E-08	1.191E-08	1.115E-08	8.836E-09	4.550E-09	5.169E-10
U-238+D1	U-234	1.997E-07	7.195E-16	2.152E-15	4.989E-15	1.462E-14	3.975E-14	1.038E-13	1.598E-13	2.595E-13
U-238+D1	Th-230	1.997E-07	1.281E-20	8.901E-20	4.673E-19	4.111E-18	3.316E-17	3.090E-16	1.819E-15	5.799E-15
U-238+D1	Ra-226+D4	1.997E-07	2.835E-24	4.499E-23	5.401E-22	1.436E-20	3.374E-19	1.027E-17	1.740E-16	2.517E-15
U-238+D1	Pb-210+D	1.997E-07	2.228E-26	6.754E-25	1.623E-23	1.165E-21	6.966E-20	4.973E-18	1.339E-16	2.696E-15
U-238+D1	Po-210	1.997E-07	1.824E-26	9.468E-25	3.520E-23	3.583E-21	2.459E-19	1.850E-17	5.054E-16	1.224E-13
U-238+D1	ΣDSR(j)		1.231E-08	1.227E-08	1.219E-08	1.191E-08	1.115E-08	8.836E-09	4.550E-09	5.173E-10
U-238+D1	U-238+D1	2.636E-13	1.625E-14	1.620E-14	1.609E-14	1.572E-14	1.471E-14	1.166E-14	6.005E-15	6.824E-16
U-238+D1	U-234	2.636E-13	9.497E-22	2.841E-21	6.585E-21	1.930E-20	5.247E-20	1.370E-19	2.109E-19	3.426E-19
U-238+D1	Th-230	2.636E-13	1.691E-26	1.175E-25	6.169E-25	5.427E-24	4.376E-23	4.079E-22	2.401E-21	7.655E-21
U-238+D1	Ra-226+D4	2.636E-13	3.742E-30	5.939E-29	7.129E-28	1.896E-26	4.454E-25	1.356E-23	2.296E-22	3.322E-21
U-238+D1	Pb-210+D1	2.636E-13	2.765E-32	8.936E-31	2.279E-29	1.712E-27	1.041E-25	7.480E-24	2.017E-22	3.814E-21
U-238+D1	ΣDSR(j)		1.625E-14	1.620E-14	1.609E-14	1.572E-14	1.471E-14	1.166E-14	6.006E-15	6.827E-16
U-238+D1	U-238+D1	3.794E-15	2.340E-16	2.332E-16	2.317E-16	2.263E-16	2.118E-16	1.679E-16	8.644E-17	9.822E-18
U-238+D1	U-234	3.794E-15	1.367E-23	4.089E-23	9.478E-23	2.778E-22	7.552E-22	1.972E-21	3.036E-21	4.931E-21
U-238+D1	Th-230	3.794E-15	2.434E-28	1.691E-27	8.879E-27	7.811E-26	6.299E-25	5.871E-24	3.456E-23	1.102E-22
U-238+D1	Ra-226+D4	3.794E-15	5.387E-32	8.548E-31	1.026E-29	2.729E-28	6.411E-27	1.951E-25	3.305E-24	4.782E-23
U-238+D1	Pb-210+D2	3.794E-15	3.090E-33	9.570E-32	2.382E-30	1.762E-28	1.066E-26	7.646E-25	2.061E-23	2.410E-22
U-238+D1	ΣDSR(j)		2.340E-16	2.332E-16	2.317E-16	2.263E-16	2.118E-16	1.679E-16	8.644E-17	9.827E-18

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Nuclide										
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Pb-210	1.143E+02	7.880E+01	7.911E+01	9.943E+01	1.919E+02	1.918E+03	1.378E+06	*7.632E+13		
Po-210	1.918E+02	1.214E+03	4.870E+04	1.992E+10	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15		
Ra-226	2.875E+00	2.881E+00	2.890E+00	2.926E+00	3.053E+00	3.663E+00	6.409E+00	2.163E+01		
Th-230	7.689E+02	6.891E+02	5.710E+02	3.579E+02	1.756E+02	6.763E+01	3.043E+01	1.780E+01		
U-234	4.699E+03	4.714E+03	4.745E+03	4.853E+03	5.166E+03	6.271E+03	8.582E+03	4.873E+03		
U-238	1.793E+02	1.799E+02	1.811E+02	1.854E+02	1.981E+02	2.499E+02	4.853E+02	4.314E+03		

*At specific activity limit

Summary : Recreator (Sheep Camp)

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Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Pb-210	1.000E+00	1.682 ± 0.003	1.558E-01	7.701E+01	1.050E-01	1.143E+02
Po-210	1.000E+00	0.000E+00	6.258E-02	1.918E+02	6.258E-02	1.918E+02
Ra-226	1.000E+00	0.000E+00	4.173E+00	2.875E+00	4.173E+00	2.875E+00
Th-230	1.000E+00	1.000E+03	6.740E-01	1.780E+01	1.561E-02	7.689E+02
U-234	1.000E+00	0.000E+00	2.554E-03	4.699E+03	2.554E-03	4.699E+03
U-238	1.000E+00	0.000E+00	6.692E-02	1.793E+02	6.692E-02	1.793E+02

Summary : Recreator (Sheep Camp)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	3.443E-02	3.332E-02	3.120E-02	2.478E-02	1.284E-02	1.285E-03	1.788E-06	2.478E-16
Pb-210	Pb-210	1.320E-06	5.204E-08	5.036E-08	4.715E-08	3.746E-08	1.940E-08	1.941E-09	2.702E-12	3.615E-22
Pb-210	Ra-226	9.996E-01	5.856E-04	1.647E-03	3.645E-03	9.601E-03	2.007E-02	2.610E-02	1.565E-02	5.312E-03
Pb-210	Ra-226	2.100E-04	1.230E-07	3.460E-07	7.657E-07	2.017E-06	4.215E-06	5.482E-06	3.286E-06	1.116E-06
Pb-210	Ra-226	1.998E-04	1.170E-07	3.292E-07	7.285E-07	1.919E-06	4.010E-06	5.215E-06	3.127E-06	1.062E-06
Pb-210	Ra-226	4.196E-08	2.458E-11	6.915E-11	1.530E-10	4.030E-10	8.423E-10	1.095E-09	6.567E-10	2.230E-10
Pb-210	Ra-226	2.000E-07	1.172E-10	3.296E-10	7.293E-10	1.921E-09	4.015E-09	5.222E-09	3.130E-09	1.063E-09
Pb-210	Th-230	9.996E-01	8.562E-08	5.719E-07	2.875E-06	2.334E-05	1.576E-04	9.184E-04	2.715E-03	5.130E-03
Pb-210	Th-230	2.100E-04	1.798E-11	1.201E-10	6.039E-10	4.903E-09	3.310E-08	1.929E-07	5.703E-07	1.078E-06
Pb-210	Th-230	1.998E-04	1.711E-11	1.143E-10	5.746E-10	4.665E-09	3.150E-08	1.835E-07	5.426E-07	1.025E-06
Pb-210	Th-230	4.196E-08	3.594E-15	2.401E-14	1.207E-13	9.798E-13	6.616E-12	3.855E-11	1.140E-10	2.154E-10
Pb-210	Th-230	2.000E-07	1.713E-14	1.144E-13	5.753E-13	4.670E-12	3.153E-11	1.838E-10	5.432E-10	1.027E-09
Pb-210	U-234	9.996E-01	1.980E-13	2.866E-12	3.182E-11	7.720E-10	1.562E-08	3.226E-07	2.845E-06	1.631E-05
Pb-210	U-234	2.100E-04	4.156E-17	6.018E-16	6.683E-15	1.622E-13	3.281E-12	6.776E-11	5.975E-10	3.426E-09
Pb-210	U-234	1.998E-04	3.954E-17	5.726E-16	6.358E-15	1.543E-13	3.122E-12	6.447E-11	5.685E-10	3.260E-09
Pb-210	U-234	4.196E-08	8.306E-21	1.203E-19	1.336E-18	3.240E-17	6.557E-16	1.354E-14	1.194E-13	6.847E-13
Pb-210	U-234	2.000E-07	3.959E-20	5.733E-19	6.366E-18	1.545E-16	3.126E-15	6.455E-14	5.692E-13	3.264E-12
Pb-210	U-238	1.599E-03	1.787E-22	5.411E-21	1.300E-19	9.333E-18	5.580E-16	3.983E-14	1.072E-12	2.159E-11
Pb-210	U-238	3.359E-07	3.749E-26	1.136E-24	2.731E-23	1.960E-21	1.172E-19	8.367E-18	2.252E-16	4.535E-15
Pb-210	U-238	3.196E-07	3.567E-26	1.081E-24	2.598E-23	1.865E-21	1.115E-19	7.960E-18	2.143E-16	4.315E-15
Pb-210	U-238	6.713E-11	6.806E-30	2.271E-28	5.457E-27	3.917E-25	2.342E-23	1.672E-21	4.501E-20	9.063E-19
Pb-210	U-238	3.200E-10	3.530E-29	1.082E-27	2.601E-26	1.867E-24	1.116E-22	7.970E-21	2.146E-19	4.320E-18
Pb-210	U-238	9.980E-01	1.115E-19	3.376E-18	8.112E-17	5.824E-15	3.482E-13	2.486E-11	6.692E-10	1.347E-08
Pb-210	U-238	2.096E-04	2.339E-23	7.090E-22	1.704E-20	1.223E-18	7.313E-17	5.221E-15	1.406E-13	2.830E-12
Pb-210	U-238	1.994E-04	2.226E-23	6.745E-22	1.621E-20	1.164E-18	6.958E-17	4.967E-15	1.337E-13	2.692E-12
Pb-210	U-238	4.189E-08	4.675E-27	1.417E-25	3.405E-24	2.444E-22	1.461E-20	1.043E-18	2.809E-17	5.655E-16
Pb-210	U-238	1.997E-07	2.228E-26	6.754E-25	1.623E-23	1.165E-21	6.966E-20	4.973E-18	1.339E-16	2.696E-15
Pb-210	ΣDOSE(j)		3.502E-02	3.497E-02	3.485E-02	3.441E-02	3.307E-02	2.831E-02	1.837E-02	1.046E-02
Po-210	Pb-210	1.000E+00	7.052E-02	1.190E-01	1.205E-01	9.591E-02	4.968E-02	4.971E-03	6.918E-06	7.099E-15
Po-210	Po-210	1.000E+00	6.258E-02	9.884E-03	2.464E-04	6.025E-10	5.579E-26	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	8.426E-04	4.031E-03	1.161E-02	3.470E-02	7.534E-02	9.910E-02	5.946E-02	2.952E-01
Po-210	Ra-226	2.100E-04	1.770E-07	8.467E-07	2.439E-06	7.289E-06	1.582E-05	2.081E-05	1.249E-05	6.201E-05
Po-210	Ra-226	1.998E-04	1.684E-07	8.056E-07	2.321E-06	6.935E-06	1.506E-05	1.980E-05	1.188E-05	5.900E-05
Po-210	Ra-226	4.196E-08	3.537E-11	1.692E-10	4.874E-10	1.457E-09	3.162E-09	4.160E-09	2.496E-09	1.239E-08
Po-210	Ra-226	2.000E-07	1.686E-10	8.065E-10	2.323E-09	6.944E-09	1.507E-08	1.983E-08	1.190E-08	5.907E-08
Po-210	Th-230	9.996E-01	9.805E-08	1.102E-06	7.883E-06	7.959E-05	5.786E-04	3.459E-03	1.029E-02	5.329E-02
Po-210	Th-230	2.100E-04	2.059E-11	2.316E-10	1.656E-09	1.672E-08	1.215E-07	7.266E-07	2.161E-06	1.119E-05
Po-210	Th-230	1.998E-04	1.959E-11	2.203E-10	1.575E-09	1.590E-08	1.156E-07	6.913E-07	2.056E-06	1.065E-05
Po-210	Th-230	4.196E-08	4.116E-15	4.628E-14	3.309E-13	3.341E-12	2.428E-11	1.452E-10	4.318E-10	2.237E-09
Po-210	Th-230	2.000E-07	1.962E-14	2.206E-13	1.577E-12	1.592E-11	1.158E-10	6.921E-10	2.058E-09	1.066E-08
Po-210	U-234	9.996E-01	1.888E-13	4.629E-12	7.695E-11	2.496E-09	5.621E-08	1.207E-06	1.076E-05	5.119E-04
Po-210	U-234	2.100E-04	3.965E-17	9.722E-16	1.616E-14	5.242E-13	1.181E-11	2.536E-10	2.260E-09	1.075E-07
Po-210	U-234	1.998E-04	3.773E-17	9.250E-16	1.538E-14	4.987E-13	1.123E-11	2.413E-10	2.150E-09	1.023E-07
Po-210	U-234	4.196E-08	7.925E-21	1.943E-19	3.230E-18	1.048E-16	2.359E-15	5.068E-14	4.516E-13	2.149E-11
Po-210	U-234	2.000E-07	3.777E-20	9.261E-19	1.540E-17	4.994E-16	1.125E-14	2.416E-13	2.153E-12	1.024E-10
Po-210	U-238	1.599E-03	1.461E-22	7.584E-21	2.819E-19	2.870E-17	1.969E-15	1.482E-13	4.048E-12	9.804E-10
Po-210	U-238	3.359E-07	3.069E-26	1.593E-24	5.922E-23	6.027E-21	4.136E-19	3.112E-17	8.502E-16	2.059E-13
Po-210	U-238	3.196E-07	2.920E-26	1.516E-24	5.634E-23	5.735E-21	3.936E-19	2.961E-17	8.089E-16	1.959E-13

Summary : Recreator (Sheep Camp)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	6.117E-30	3.175E-28	1.183E-26	1.205E-24	8.266E-23	6.220E-21	1.699E-19	4.115E-17
Po-210	U-238	3.200E-10	2.916E-29	1.517E-27	5.641E-26	5.742E-24	3.940E-22	2.965E-20	8.099E-19	1.962E-16
Po-210	U-238	9.980E-01	9.119E-20	4.732E-18	1.759E-16	1.791E-14	1.229E-12	9.246E-11	2.526E-09	6.117E-07
Po-210	U-238	2.096E-04	1.915E-23	9.940E-22	3.695E-20	3.761E-18	2.581E-16	1.942E-14	5.305E-13	1.285E-10
Po-210	U-238	1.994E-04	1.822E-23	9.457E-22	3.516E-20	3.578E-18	2.456E-16	1.848E-14	5.048E-13	1.223E-10
Po-210	U-238	4.189E-08	3.827E-27	1.986E-25	7.385E-24	7.516E-22	5.158E-20	3.881E-18	1.060E-16	2.568E-14
Po-210	U-238	1.997E-07	1.824E-26	9.468E-25	3.520E-23	3.583E-21	2.459E-19	1.850E-17	5.054E-16	1.224E-13
Po-210	ΣDOSE(j)		1.339E-01	1.329E-01	1.324E-01	1.307E-01	1.256E-01	1.076E-01	6.979E-02	3.492E-01
Pb-210	Pb-210	1.900E-08	5.312E-09	5.140E-09	4.813E-09	3.823E-09	1.981E-09	1.982E-10	2.758E-13	2.903E-23
Pb-210	Ra-226	1.899E-08	8.414E-11	2.469E-10	5.552E-10	1.474E-09	3.089E-09	4.021E-09	2.411E-09	3.971E-10
Pb-210	Ra-226	3.989E-12	1.767E-14	5.186E-14	1.166E-13	3.096E-13	6.488E-13	8.446E-13	5.063E-13	8.341E-14
Pb-210	Ra-226	3.795E-12	1.681E-14	4.934E-14	1.109E-13	2.946E-13	6.173E-13	8.035E-13	4.817E-13	7.936E-14
Pb-210	Ra-226	7.972E-16	3.532E-18	1.036E-17	2.330E-17	6.188E-17	1.297E-16	1.688E-16	1.012E-16	1.667E-17
Pb-210	Ra-226	3.800E-15	1.684E-17	4.940E-17	1.111E-16	2.949E-16	6.181E-16	8.045E-16	4.823E-16	7.945E-17
Pb-210	Th-230	1.899E-08	1.195E-14	8.321E-14	4.309E-13	3.562E-12	2.420E-11	1.414E-10	4.181E-10	7.397E-10
Pb-210	Th-230	3.989E-12	2.510E-18	1.748E-17	9.051E-17	7.482E-16	5.084E-15	2.969E-14	8.782E-14	1.554E-13
Pb-210	Th-230	3.795E-12	2.388E-18	1.663E-17	8.611E-17	7.119E-16	4.837E-15	2.825E-14	8.355E-14	1.478E-13
Pb-210	Th-230	7.972E-16	5.016E-22	3.493E-21	1.809E-20	1.495E-19	1.016E-18	5.934E-18	1.755E-17	3.105E-17
Pb-210	Th-230	3.800E-15	2.391E-21	1.665E-20	8.622E-20	7.127E-19	4.843E-18	2.828E-17	8.365E-17	1.480E-16
Pb-210	U-234	1.899E-08	2.743E-20	4.104E-19	4.715E-18	1.173E-16	2.395E-15	4.963E-14	4.380E-13	1.822E-12
Pb-210	U-234	3.989E-12	5.762E-24	8.620E-23	9.904E-22	2.463E-20	5.030E-19	1.042E-17	9.200E-17	3.827E-16
Pb-210	U-234	3.795E-12	5.482E-24	8.201E-23	9.423E-22	2.343E-20	4.786E-19	9.917E-18	8.753E-17	3.641E-16
Pb-210	U-234	7.972E-16	1.151E-27	1.723E-26	1.979E-25	4.922E-24	1.005E-22	2.083E-21	1.839E-20	7.649E-20
Pb-210	U-234	3.800E-15	5.488E-27	8.211E-26	9.434E-25	2.346E-23	4.792E-22	9.930E-21	8.764E-20	3.646E-19
Pb-210	U-238	3.039E-11	2.401E-29	7.665E-28	1.908E-26	1.411E-24	8.540E-23	6.124E-21	1.651E-19	1.930E-18
Pb-210	U-238	6.383E-15	0.000E+00	0.000E+00	3.571E-30	2.960E-28	1.794E-26	1.286E-24	3.468E-23	4.054E-22
Pb-210	U-238	6.073E-15	0.000E+00	0.000E+00	3.398E-30	2.816E-28	1.707E-26	1.224E-24	3.299E-23	3.857E-22
Pb-210	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.184E-30	2.567E-28	6.929E-27	8.101E-26
Pb-210	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.635E-29	1.225E-27	3.303E-26	3.862E-25
Pb-210	U-238	1.896E-08	1.544E-26	4.783E-25	1.190E-23	8.807E-22	5.329E-20	3.821E-18	1.030E-16	1.204E-15
Pb-210	U-238	3.983E-12	2.921E-30	1.003E-28	2.501E-27	1.850E-25	1.119E-23	8.027E-22	2.164E-20	2.530E-19
Pb-210	U-238	3.789E-12	2.779E-30	9.544E-29	2.379E-27	1.760E-25	1.065E-23	7.637E-22	2.059E-20	2.407E-19
Pb-210	U-238	7.959E-16	0.000E+00	0.000E+00	0.000E+00	3.691E-29	2.237E-27	1.604E-25	4.324E-24	5.055E-23
Pb-210	U-238	3.794E-15	0.000E+00	0.000E+00	2.123E-30	1.759E-28	1.066E-26	7.646E-25	2.061E-23	2.410E-22
Pb-210	ΣDOSE(j)		5.396E-09	5.387E-09	5.369E-09	5.302E-09	5.095E-09	4.362E-09	2.831E-09	1.139E-09
Ra-226	Ra-226	9.996E-01	4.169E+00	4.157E+00	4.134E+00	4.053E+00	3.832E+00	3.149E+00	1.796E+00	2.540E-01
Ra-226	Ra-226	1.319E-06	5.503E-06	5.487E-06	5.457E-06	5.350E-06	5.058E-06	4.156E-06	2.371E-06	3.353E-07
Ra-226	Th-230	9.996E-01	9.030E-04	2.706E-03	6.298E-03	1.871E-02	5.285E-02	1.583E-01	3.664E-01	6.006E-01
Ra-226	Th-230	1.319E-06	1.192E-09	3.572E-09	8.313E-09	2.470E-08	6.977E-08	2.089E-07	4.836E-07	7.928E-07
Ra-226	Th-230	1.899E-08	1.716E-11	5.142E-11	1.197E-10	3.555E-10	1.004E-09	3.007E-09	6.961E-09	1.141E-08
Ra-226	U-234	9.996E-01	2.765E-09	1.933E-08	1.018E-07	8.979E-07	7.269E-06	6.855E-05	4.160E-04	1.435E-03
Ra-226	U-234	1.319E-06	3.650E-15	2.552E-14	1.344E-13	1.185E-12	9.595E-12	9.049E-11	5.492E-10	1.894E-09
Ra-226	U-234	1.899E-08	5.254E-17	3.673E-16	1.934E-15	1.706E-14	1.381E-13	1.303E-12	7.905E-12	2.726E-11
Ra-226	U-238	1.599E-03	3.122E-18	4.675E-17	5.431E-16	1.417E-14	3.307E-13	1.004E-11	1.699E-10	1.472E-09
Ra-226	U-238	2.111E-09	4.120E-24	6.171E-23	7.168E-22	1.870E-20	4.365E-19	1.325E-17	2.243E-16	1.943E-15
Ra-226	U-238	3.039E-11	5.931E-26	8.882E-25	1.032E-23	2.692E-22	6.283E-21	1.908E-19	3.229E-18	2.797E-17
Ra-226	U-238	9.980E-01	1.948E-15	2.917E-14	3.389E-13	8.842E-12	2.063E-10	6.265E-09	1.060E-07	9.187E-07

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	2.571E-21	3.851E-20	4.473E-19	1.167E-17	2.724E-16	8.270E-15	1.400E-13	1.213E-12
Ra-226	U-238	1.896E-08	3.701E-23	5.542E-22	6.439E-21	1.680E-19	3.920E-18	1.190E-16	2.015E-15	1.745E-14
Ra-226	ΣDOSE(j)		4.170E+00	4.160E+00	4.140E+00	4.072E+00	3.885E+00	3.307E+00	2.163E+00	8.560E-01
Pb-210	Ra-226	1.319E-06	8.763E-10	2.480E-09	5.499E-09	1.450E-08	3.032E-08	3.944E-08	2.364E-08	7.431E-09
Pb-210	Ra-226	2.771E-10	1.841E-13	5.208E-13	1.155E-12	3.046E-12	6.368E-12	8.284E-12	4.966E-12	1.561E-12
Pb-210	Ra-226	2.637E-10	1.751E-13	4.955E-13	1.099E-12	2.898E-12	6.059E-12	7.881E-12	4.725E-12	1.485E-12
Pb-210	Ra-226	5.538E-14	3.678E-17	1.041E-16	2.308E-16	6.087E-16	1.273E-15	1.655E-15	9.924E-16	3.119E-16
Pb-210	Ra-226	2.640E-13	1.753E-16	4.961E-16	1.100E-15	2.901E-15	6.066E-15	7.891E-15	4.730E-15	1.487E-15
Pb-210	Th-230	1.319E-06	1.105E-13	7.934E-13	4.170E-12	3.474E-11	2.367E-10	1.384E-09	4.093E-09	7.663E-09
Pb-210	Th-230	2.771E-10	2.320E-17	1.667E-16	8.758E-16	7.297E-15	4.971E-14	2.906E-13	8.597E-13	1.610E-12
Pb-210	Th-230	2.637E-10	2.207E-17	1.586E-16	8.333E-16	6.943E-15	4.730E-14	2.765E-13	8.179E-13	1.531E-12
Pb-210	Th-230	5.538E-14	4.637E-21	3.330E-20	1.750E-19	1.458E-18	9.935E-18	5.807E-17	1.718E-16	3.217E-16
Pb-210	Th-230	2.640E-13	2.210E-20	1.588E-19	8.343E-19	6.951E-18	4.735E-17	2.768E-16	8.189E-16	1.533E-15
Pb-210	U-234	1.319E-06	2.493E-19	3.870E-18	4.537E-17	1.141E-15	2.340E-14	4.856E-13	4.287E-12	2.360E-11
Pb-210	U-234	2.771E-10	5.236E-23	8.129E-22	9.529E-21	2.397E-19	4.915E-18	1.020E-16	9.006E-16	4.958E-15
Pb-210	U-234	2.637E-10	4.981E-23	7.734E-22	9.066E-21	2.281E-19	4.676E-18	9.704E-17	8.568E-16	4.717E-15
Pb-210	U-234	5.538E-14	1.046E-26	1.625E-25	1.904E-24	4.791E-23	9.822E-22	2.038E-20	1.800E-19	9.908E-19
Pb-210	U-234	2.640E-13	4.987E-26	7.744E-25	9.077E-24	2.284E-22	4.682E-21	9.716E-20	8.578E-19	4.723E-18
Pb-210	U-238	2.111E-09	2.215E-28	7.158E-27	1.826E-25	1.371E-23	8.338E-22	5.991E-20	1.616E-18	3.055E-17
Pb-210	U-238	4.434E-13	0.000E+00	0.000E+00	3.791E-29	2.880E-27	1.751E-25	1.258E-23	3.394E-22	6.416E-21
Pb-210	U-238	4.219E-13	0.000E+00	0.000E+00	3.607E-29	2.740E-27	1.666E-25	1.197E-23	3.229E-22	6.105E-21
Pb-210	U-238	8.862E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.461E-29	2.515E-27	6.783E-26	1.282E-24
Pb-210	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	1.351E-30	1.668E-28	1.199E-26	3.233E-25	6.112E-24
Pb-210	U-238	1.317E-06	1.382E-25	4.466E-24	1.139E-22	8.555E-21	5.203E-19	3.739E-17	1.008E-15	1.906E-14
Pb-210	U-238	2.767E-10	2.867E-29	9.381E-28	2.393E-26	1.797E-24	1.093E-22	7.853E-21	2.118E-19	4.004E-18
Pb-210	U-238	2.633E-10	2.728E-29	8.925E-28	2.277E-26	1.710E-24	1.040E-22	7.471E-21	2.015E-19	3.809E-18
Pb-210	U-238	5.530E-14	0.000E+00	0.000E+00	3.728E-30	3.591E-28	2.184E-26	1.569E-24	4.232E-23	8.001E-22
Pb-210	U-238	2.636E-13	0.000E+00	0.000E+00	2.253E-29	1.712E-27	1.041E-25	7.480E-24	2.017E-22	3.814E-21
Pb-210	ΣDOSE(j)		8.767E-10	2.481E-09	5.506E-09	1.454E-08	3.057E-08	4.084E-08	2.775E-08	1.512E-08
Ra-226	Ra-226	1.899E-08	7.921E-08	7.898E-08	7.854E-08	7.701E-08	7.281E-08	5.982E-08	3.412E-08	4.826E-09
Ra-226	Ra-226	2.100E-04	2.274E-03	2.267E-03	2.255E-03	2.211E-03	2.090E-03	1.717E-03	9.796E-04	1.378E-04
Ra-226	ΣDOSE(j)		2.274E-03	2.268E-03	2.255E-03	2.211E-03	2.090E-03	1.717E-03	9.796E-04	1.378E-04
Ra-226	Ra-226	2.771E-10	3.001E-09	2.993E-09	2.976E-09	2.918E-09	2.759E-09	2.267E-09	1.293E-09	1.819E-10
Ra-226	Ra-226	3.989E-12	4.320E-11	4.308E-11	4.284E-11	4.201E-11	3.971E-11	3.263E-11	1.861E-11	2.618E-12
Ra-226	ΣDOSE(j)		3.045E-09	3.036E-09	3.019E-09	2.960E-09	2.799E-09	2.300E-09	1.312E-09	1.845E-10
Ra-226	Ra-226	1.998E-04	7.323E-04	7.302E-04	7.261E-04	7.120E-04	6.731E-04	5.530E-04	3.155E-04	4.467E-05
Ra-226	Ra-226	2.637E-10	9.666E-10	9.639E-10	9.585E-10	9.398E-10	8.885E-10	7.300E-10	4.164E-10	5.896E-11
Ra-226	Th-230	1.998E-04	1.586E-07	4.754E-07	1.106E-06	3.287E-06	9.284E-06	2.780E-05	6.435E-05	1.055E-04
Ra-226	Th-230	2.637E-10	2.094E-13	6.275E-13	1.460E-12	4.338E-12	1.225E-11	3.670E-11	8.495E-11	1.393E-10
Ra-226	Th-230	3.795E-12	3.013E-15	9.032E-15	2.102E-14	6.244E-14	1.764E-13	5.282E-13	1.223E-12	2.005E-12
Ra-226	U-234	1.998E-04	4.857E-13	3.395E-12	1.788E-11	1.577E-10	1.277E-09	1.204E-08	7.308E-08	2.521E-07
Ra-226	U-234	2.637E-10	6.411E-19	4.482E-18	2.360E-17	2.082E-16	1.685E-15	1.589E-14	9.646E-14	3.328E-13
Ra-226	U-234	3.795E-12	9.228E-21	6.451E-20	3.397E-19	2.997E-18	2.426E-17	2.288E-16	1.389E-15	4.790E-15
Ra-226	U-238	3.196E-07	5.482E-22	8.211E-21	9.539E-20	2.489E-18	5.808E-17	1.764E-15	2.985E-14	2.588E-13
Ra-226	U-238	4.219E-13	7.235E-28	1.084E-26	1.259E-25	3.285E-24	7.667E-23	2.328E-21	3.940E-20	3.416E-19

Summary : Recreator (Sheep Camp)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	1.037E-29	1.553E-28	1.812E-27	4.729E-26	1.104E-24	3.351E-23	5.672E-22	4.917E-21
Ra-226	U-238	1.994E-04	3.421E-19	5.123E-18	5.952E-17	1.553E-15	3.624E-14	1.101E-12	1.863E-11	1.615E-10
Ra-226	U-238	2.633E-10	4.515E-25	6.763E-24	7.857E-23	2.050E-21	4.784E-20	1.453E-18	2.459E-17	2.132E-16
Ra-226	U-238	3.789E-12	6.500E-27	9.735E-26	1.131E-24	2.951E-23	6.886E-22	2.091E-20	3.539E-19	3.068E-18
Ra-226	ΣDOSE (j)		7.324E-04	7.307E-04	7.272E-04	7.153E-04	6.824E-04	5.809E-04	3.799E-04	1.504E-04
Ra-226	Ra-226	3.795E-12	1.391E-11	1.387E-11	1.380E-11	1.353E-11	1.279E-11	1.051E-11	5.994E-12	8.486E-13
Ra-226	Ra-226	4.196E-08	4.332E-07	4.320E-07	4.296E-07	4.212E-07	3.982E-07	3.272E-07	1.866E-07	2.626E-08
Ra-226	ΣDOSE (j)		4.332E-07	4.320E-07	4.296E-07	4.212E-07	3.983E-07	3.272E-07	1.866E-07	2.626E-08
Ra-226	Ra-226	5.538E-14	5.719E-13	5.703E-13	5.671E-13	5.560E-13	5.257E-13	4.319E-13	2.464E-13	3.466E-14
Ra-226	Ra-226	7.972E-16	8.231E-15	8.208E-15	8.162E-15	8.003E-15	7.567E-15	6.217E-15	3.546E-15	4.989E-16
Ra-226	ΣDOSE (j)		5.801E-13	5.785E-13	5.752E-13	5.640E-13	5.332E-13	4.381E-13	2.499E-13	3.516E-14
Ra-226	Ra-226	2.000E-07	6.841E-09	6.822E-09	6.784E-09	6.652E-09	6.288E-09	5.167E-09	2.947E-09	8.590E-10
Ra-226	Ra-226	2.640E-13	9.030E-15	9.005E-15	8.954E-15	8.780E-15	8.301E-15	6.820E-15	3.890E-15	1.134E-15
Ra-226	Th-230	2.000E-07	1.395E-12	4.339E-12	1.023E-11	3.060E-11	8.663E-11	2.596E-10	6.011E-10	1.040E-09
Ra-226	Th-230	2.640E-13	1.841E-18	5.728E-18	1.351E-17	4.039E-17	1.144E-16	3.427E-16	7.935E-16	1.373E-15
Ra-226	Th-230	3.800E-15	2.650E-20	8.245E-20	1.944E-19	5.814E-19	1.646E-18	4.933E-18	1.142E-17	1.976E-17
Ra-226	U-234	2.000E-07	4.131E-18	3.035E-17	1.637E-16	1.463E-15	1.190E-14	1.124E-13	6.825E-13	3.129E-12
Ra-226	U-234	2.640E-13	5.452E-24	4.006E-23	2.161E-22	1.932E-21	1.571E-20	1.484E-19	9.010E-19	4.131E-18
Ra-226	U-234	3.800E-15	7.848E-26	5.766E-25	3.111E-24	2.781E-23	2.261E-22	2.136E-21	1.297E-20	5.946E-20
Ra-226	U-238	3.200E-10	4.544E-27	7.210E-26	8.655E-25	2.302E-23	5.407E-22	1.646E-20	2.788E-19	4.034E-18
Ra-226	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	2.972E-29	7.137E-28	2.173E-26	3.680E-25	5.325E-24
Ra-226	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.005E-29	3.127E-28	5.297E-27	7.664E-26
Ra-226	U-238	1.997E-07	2.835E-24	4.499E-23	5.401E-22	1.436E-20	3.374E-19	1.027E-17	1.740E-16	2.517E-15
Ra-226	U-238	2.636E-13	1.916E-30	5.939E-29	7.129E-28	1.896E-26	4.454E-25	1.356E-23	2.296E-22	3.322E-21
Ra-226	U-238	3.794E-15	0.000E+00	0.000E+00	1.003E-29	2.729E-28	6.411E-27	1.951E-25	3.305E-24	4.782E-23
Ra-226	ΣDOSE (j)		6.842E-09	6.826E-09	6.794E-09	6.682E-09	6.375E-09	5.426E-09	3.549E-09	1.902E-09
Ra-226	Ra-226	3.800E-15	1.300E-16	1.296E-16	1.289E-16	1.264E-16	1.195E-16	9.817E-17	5.600E-17	1.632E-17
Th-230	Th-230	9.996E-01	1.470E-02	1.470E-02	1.470E-02	1.470E-02	1.469E-02	1.468E-02	1.464E-02	1.452E-02
Th-230	Th-230	1.319E-06	1.940E-08	1.940E-08	1.940E-08	1.940E-08	1.939E-08	1.938E-08	1.933E-08	1.917E-08
Th-230	U-234	9.996E-01	6.791E-08	2.027E-07	4.707E-07	1.395E-06	3.920E-06	1.154E-05	2.564E-05	3.888E-05
Th-230	U-234	1.319E-06	8.964E-14	2.675E-13	6.214E-13	1.841E-12	5.174E-12	1.523E-11	3.384E-11	5.132E-11
Th-230	U-234	1.899E-08	1.290E-15	3.851E-15	8.944E-15	2.650E-14	7.448E-14	2.193E-13	4.871E-13	7.387E-13
Th-230	U-234	2.100E-04	1.426E-11	4.257E-11	9.887E-11	2.930E-10	8.233E-10	2.424E-09	5.385E-09	8.166E-09
Th-230	U-234	2.771E-10	1.883E-17	5.620E-17	1.305E-16	3.868E-16	1.087E-15	3.200E-15	7.108E-15	1.078E-14
Th-230	U-234	3.989E-12	2.710E-19	8.089E-19	1.879E-18	5.567E-18	1.564E-17	4.606E-17	1.023E-16	1.551E-16
Th-230	U-234	1.998E-04	1.357E-11	4.050E-11	9.407E-11	2.788E-10	7.833E-10	2.306E-09	5.123E-09	7.769E-09
Th-230	U-234	2.637E-10	1.791E-17	5.347E-17	1.242E-16	3.680E-16	1.034E-15	3.044E-15	6.763E-15	1.026E-14
Th-230	U-234	3.795E-12	2.579E-19	7.696E-19	1.787E-18	5.297E-18	1.488E-17	4.382E-17	9.734E-17	1.476E-16
Th-230	U-234	4.196E-08	2.851E-15	8.508E-15	1.976E-14	5.855E-14	1.645E-13	4.844E-13	1.076E-12	1.632E-12
Th-230	U-234	5.538E-14	3.763E-21	1.123E-20	2.608E-20	7.729E-20	2.172E-19	6.394E-19	1.420E-18	2.154E-18
Th-230	U-234	7.972E-16	5.416E-23	1.616E-22	3.754E-22	1.113E-21	3.126E-21	9.204E-21	2.045E-20	3.101E-20
Th-230	U-234	2.000E-07	1.359E-14	4.055E-14	9.419E-14	2.791E-13	7.843E-13	2.309E-12	5.130E-12	7.778E-12
Th-230	U-234	2.640E-13	1.794E-20	5.353E-20	1.243E-19	3.684E-19	1.035E-18	3.048E-18	6.771E-18	1.027E-17
Th-230	U-234	3.800E-15	2.582E-22	7.705E-22	1.790E-21	5.303E-21	1.490E-20	4.387E-20	9.746E-20	1.478E-19

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	1.026E-16	7.129E-16	3.743E-15	3.293E-14	2.656E-13	2.475E-12	1.457E-11	4.645E-11
Th-230	U-238	2.111E-09	1.354E-22	9.411E-22	4.941E-21	4.346E-20	3.505E-19	3.267E-18	1.923E-17	6.131E-17
Th-230	U-238	3.039E-11	1.949E-24	1.355E-23	7.112E-23	6.256E-22	5.046E-21	4.703E-20	2.768E-19	8.825E-19
Th-230	U-238	3.359E-07	2.155E-20	1.498E-19	7.862E-19	6.916E-18	5.578E-17	5.199E-16	3.060E-15	9.756E-15
Th-230	U-238	4.434E-13	2.845E-26	1.977E-25	1.038E-24	9.130E-24	7.363E-23	6.863E-22	4.039E-21	1.288E-20
Th-230	U-238	6.383E-15	4.094E-28	2.845E-27	1.494E-26	1.314E-25	1.060E-24	9.878E-24	5.813E-23	1.854E-22
Th-230	U-238	3.196E-07	2.050E-20	1.425E-19	7.480E-19	6.580E-18	5.307E-17	4.946E-16	2.911E-15	9.282E-15
Th-230	U-238	4.219E-13	2.706E-26	1.881E-25	9.874E-25	8.686E-24	7.005E-23	6.529E-22	3.843E-21	1.225E-20
Th-230	U-238	6.073E-15	3.896E-28	2.707E-27	1.421E-26	1.250E-25	1.008E-24	9.398E-24	5.531E-23	1.764E-22
Th-230	U-238	6.713E-11	4.307E-24	2.993E-23	1.571E-22	1.382E-21	1.115E-20	1.039E-19	6.114E-19	1.950E-18
Th-230	U-238	8.862E-17	5.317E-30	3.950E-29	2.074E-28	1.824E-27	1.471E-26	1.371E-25	8.071E-25	2.574E-24
Th-230	U-238	1.276E-18	0.000E+00	0.000E+00	2.814E-30	2.479E-29	2.118E-28	1.974E-27	1.162E-26	3.704E-26
Th-230	U-238	3.200E-10	2.053E-23	1.426E-22	7.489E-22	6.588E-21	5.313E-20	4.952E-19	2.915E-18	9.293E-18
Th-230	U-238	4.224E-16	2.535E-29	1.883E-28	9.885E-28	8.697E-27	7.014E-26	6.537E-25	3.847E-24	1.227E-23
Th-230	U-238	6.080E-18	0.000E+00	2.549E-30	1.341E-29	1.252E-28	1.010E-27	9.409E-27	5.538E-26	1.766E-25
Th-230	U-238	9.980E-01	6.402E-14	4.449E-13	2.336E-12	2.055E-11	1.657E-10	1.544E-09	9.090E-09	2.898E-08
Th-230	U-238	1.317E-06	8.451E-20	5.872E-19	3.083E-18	2.712E-17	2.187E-16	2.039E-15	1.200E-14	3.826E-14
Th-230	U-238	1.896E-08	1.216E-21	8.453E-21	4.438E-20	3.904E-19	3.148E-18	2.935E-17	1.727E-16	5.507E-16
Th-230	U-238	2.096E-04	1.345E-17	9.344E-17	4.906E-16	4.316E-15	3.481E-14	3.244E-13	1.909E-12	6.088E-12
Th-230	U-238	2.767E-10	1.775E-23	1.233E-22	6.476E-22	5.697E-21	4.594E-20	4.282E-19	2.520E-18	8.036E-18
Th-230	U-238	3.983E-12	2.555E-25	1.775E-24	9.321E-24	8.200E-23	6.613E-22	6.164E-21	3.628E-20	1.157E-19
Th-230	U-238	1.994E-04	1.279E-17	8.890E-17	4.667E-16	4.106E-15	3.312E-14	3.086E-13	1.816E-12	5.792E-12
Th-230	U-238	2.633E-10	1.689E-23	1.174E-22	6.161E-22	5.420E-21	4.371E-20	4.074E-19	2.398E-18	7.645E-18
Th-230	U-238	3.789E-12	2.431E-25	1.689E-24	8.868E-24	7.802E-23	6.292E-22	5.864E-21	3.451E-20	1.100E-19
Th-230	U-238	4.189E-08	2.687E-21	1.867E-20	9.804E-20	8.625E-19	6.956E-18	6.483E-17	3.815E-16	1.217E-15
Th-230	U-238	5.530E-14	3.547E-27	2.465E-26	1.294E-25	1.138E-24	9.181E-24	8.558E-23	5.036E-22	1.606E-21
Th-230	U-238	7.959E-16	5.106E-29	3.548E-28	1.863E-27	1.639E-26	1.322E-25	1.232E-24	7.249E-24	2.311E-23
Th-230	U-238	1.997E-07	1.281E-20	8.901E-20	4.673E-19	4.111E-18	3.316E-17	3.090E-16	1.819E-15	5.799E-15
Th-230	U-238	2.636E-13	1.691E-26	1.175E-25	6.169E-25	5.427E-24	4.376E-23	4.079E-22	2.401E-21	7.655E-21
Th-230	U-238	3.794E-15	2.434E-28	1.691E-27	8.879E-27	7.811E-26	6.299E-25	5.871E-24	3.456E-23	1.102E-22
Th-230	ΣDOSE(j)		1.470E-02	1.470E-02	1.470E-02	1.470E-02	1.470E-02	1.469E-02	1.467E-02	1.456E-02
Th-230	Th-230	1.899E-08	2.793E-10	2.792E-10	2.792E-10	2.792E-10	2.792E-10	2.789E-10	2.783E-10	2.759E-10
Th-230	Th-230	2.100E-04	3.087E-06	3.087E-06	3.087E-06	3.087E-06	3.086E-06	3.083E-06	3.076E-06	3.050E-06
Th-230	ΣDOSE(j)		3.087E-06	3.087E-06	3.087E-06	3.087E-06	3.086E-06	3.084E-06	3.076E-06	3.051E-06
Ra-226	Th-230	2.100E-04	4.927E-07	1.476E-06	3.435E-06	1.021E-05	2.883E-05	8.633E-05	1.998E-04	3.275E-04
Ra-226	Th-230	3.989E-12	9.361E-15	2.805E-14	6.527E-14	1.939E-13	5.478E-13	1.640E-12	3.797E-12	6.223E-12
Ra-226	U-234	2.100E-04	1.509E-12	1.055E-11	5.553E-11	4.898E-10	3.965E-09	3.739E-08	2.269E-07	7.813E-07
Ra-226	U-234	2.771E-10	1.992E-18	1.392E-17	7.330E-17	6.465E-16	5.234E-15	4.936E-14	2.995E-13	1.031E-12
Ra-226	U-234	3.989E-12	2.867E-20	2.004E-19	1.055E-18	9.305E-18	7.533E-17	7.105E-16	4.312E-15	1.484E-14
Ra-226	U-238	3.359E-07	1.704E-21	2.551E-20	2.963E-19	7.729E-18	1.804E-16	5.477E-15	9.269E-14	8.003E-13
Ra-226	U-238	4.434E-13	2.249E-27	3.367E-26	3.911E-25	1.020E-23	2.381E-22	7.229E-21	1.224E-19	1.056E-18
Ra-226	U-238	6.383E-15	3.232E-29	4.839E-28	5.628E-27	1.469E-25	3.427E-24	1.041E-22	1.761E-21	1.521E-20
Ra-226	U-238	2.096E-04	1.063E-18	1.592E-17	1.849E-16	4.823E-15	1.125E-13	3.417E-12	5.784E-11	4.994E-10
Ra-226	U-238	2.767E-10	1.403E-24	2.101E-23	2.440E-22	6.366E-21	1.486E-19	4.511E-18	7.635E-17	6.592E-16
Ra-226	U-238	3.983E-12	2.020E-26	3.024E-25	3.512E-24	9.164E-23	2.138E-21	6.493E-20	1.099E-18	9.488E-18
Ra-226	ΣDOSE(j)		4.927E-07	1.476E-06	3.435E-06	1.021E-05	2.883E-05	8.637E-05	2.001E-04	3.283E-04

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	4.075E-12	4.075E-12	4.075E-12	4.075E-12	4.074E-12	4.070E-12	4.060E-12	4.027E-12
Th-230	Th-230	3.989E-12	5.866E-14	5.865E-14	5.865E-14	5.865E-14	5.863E-14	5.859E-14	5.845E-14	5.796E-14
Th-230	ΣDOSE(j)		4.134E-12	4.134E-12	4.134E-12	4.133E-12	4.132E-12	4.129E-12	4.119E-12	4.084E-12
Ra-226	Th-230	2.771E-10	6.503E-13	1.949E-12	4.535E-12	1.347E-11	3.805E-11	1.140E-10	2.638E-10	4.323E-10
Th-230	Th-230	1.998E-04	2.937E-06	2.937E-06	2.937E-06	2.937E-06	2.936E-06	2.934E-06	2.927E-06	2.902E-06
Th-230	Th-230	2.637E-10	3.877E-12	3.877E-12	3.877E-12	3.877E-12	3.876E-12	3.872E-12	3.863E-12	3.831E-12
Th-230	ΣDOSE(j)		2.937E-06	2.937E-06	2.937E-06	2.937E-06	2.936E-06	2.934E-06	2.927E-06	2.902E-06
Th-230	Th-230	3.795E-12	5.581E-14	5.581E-14	5.580E-14	5.580E-14	5.579E-14	5.574E-14	5.561E-14	5.514E-14
Th-230	Th-230	4.196E-08	6.169E-10	6.169E-10	6.169E-10	6.169E-10	6.167E-10	6.162E-10	6.147E-10	6.096E-10
Th-230	ΣDOSE(j)		6.170E-10	6.170E-10	6.170E-10	6.169E-10	6.168E-10	6.162E-10	6.148E-10	6.096E-10
Ra-226	Th-230	4.196E-08	9.387E-11	2.813E-10	6.545E-10	1.944E-09	5.493E-09	1.645E-08	3.807E-08	6.240E-08
Ra-226	Th-230	7.972E-16	1.783E-18	5.344E-18	1.244E-17	3.694E-17	1.044E-16	3.125E-16	7.234E-16	1.186E-15
Ra-226	U-234	4.196E-08	2.875E-16	2.009E-15	1.058E-14	9.331E-14	7.554E-13	7.124E-12	4.324E-11	1.489E-10
Ra-226	U-234	5.538E-14	3.795E-22	2.652E-21	1.397E-20	1.232E-19	9.972E-19	9.404E-18	5.707E-17	1.965E-16
Ra-226	U-234	7.972E-16	5.463E-24	3.818E-23	2.010E-22	1.773E-21	1.435E-20	1.354E-19	8.215E-19	2.828E-18
Ra-226	U-238	6.713E-11	3.246E-25	4.859E-24	5.644E-23	1.473E-21	3.436E-20	1.043E-18	1.766E-17	1.525E-16
Ra-226	U-238	8.862E-17	0.000E+00	6.404E-30	7.438E-29	1.944E-27	4.536E-26	1.377E-24	2.331E-23	2.013E-22
Ra-226	U-238	1.276E-18	0.000E+00	0.000E+00	1.071E-30	2.793E-29	6.517E-28	1.983E-26	3.356E-25	2.897E-24
Ra-226	U-238	4.189E-08	2.025E-22	3.032E-21	3.522E-20	9.189E-19	2.144E-17	6.511E-16	1.102E-14	9.516E-14
Ra-226	U-238	5.530E-14	2.670E-28	4.002E-27	4.649E-26	1.213E-24	2.830E-23	8.595E-22	1.455E-20	1.256E-19
Ra-226	U-238	7.959E-16	3.842E-30	5.752E-29	6.680E-28	1.746E-26	4.074E-25	1.237E-23	2.094E-22	1.808E-21
Ra-226	ΣDOSE(j)		9.387E-11	2.813E-10	6.545E-10	1.945E-09	5.493E-09	1.645E-08	3.812E-08	6.255E-08
Th-230	Th-230	5.538E-14	8.143E-16	8.143E-16	8.143E-16	8.143E-16	8.141E-16	8.134E-16	8.114E-16	8.047E-16
Th-230	Th-230	7.972E-16	1.172E-17	1.172E-17	1.172E-17	1.172E-17	1.172E-17	1.171E-17	1.168E-17	1.158E-17
Th-230	ΣDOSE(j)		8.261E-16	8.261E-16	8.260E-16	8.260E-16	8.258E-16	8.251E-16	8.231E-16	8.162E-16
Ra-226	Th-230	5.538E-14	1.239E-16	3.713E-16	8.640E-16	2.567E-15	7.250E-15	2.171E-14	5.026E-14	8.237E-14
Th-230	Th-230	2.000E-07	2.941E-09	2.941E-09	2.941E-09	2.940E-09	2.940E-09	2.937E-09	2.930E-09	2.906E-09
Th-230	Th-230	2.640E-13	3.882E-15	3.882E-15	3.882E-15	3.881E-15	3.880E-15	3.877E-15	3.868E-15	3.836E-15
Th-230	ΣDOSE(j)		2.941E-09	2.941E-09	2.941E-09	2.940E-09	2.940E-09	2.937E-09	2.930E-09	2.906E-09
Th-230	Th-230	3.800E-15	5.587E-17	5.587E-17	5.587E-17	5.587E-17	5.585E-17	5.581E-17	5.567E-17	5.521E-17
U-234	U-234	9.996E-01	2.553E-03	2.544E-03	2.527E-03	2.469E-03	2.310E-03	1.831E-03	9.423E-04	4.593E-04
U-234	U-234	1.319E-06	3.369E-09	3.358E-09	3.336E-09	3.259E-09	3.050E-09	2.417E-09	1.244E-09	6.063E-10
U-234	U-238	1.599E-03	5.762E-12	1.724E-11	3.996E-11	1.171E-10	3.184E-10	8.314E-10	1.280E-09	2.079E-09
U-234	U-238	2.111E-09	7.606E-18	2.275E-17	5.274E-17	1.546E-16	4.202E-16	1.098E-15	1.689E-15	2.744E-15
U-234	U-238	3.039E-11	1.095E-19	3.275E-19	7.592E-19	2.225E-18	6.049E-18	1.580E-17	2.431E-17	3.950E-17
U-234	U-238	3.359E-07	1.210E-15	3.620E-15	8.393E-15	2.460E-14	6.687E-14	1.746E-13	2.688E-13	4.366E-13
U-234	U-238	4.434E-13	1.598E-21	4.779E-21	1.108E-20	3.247E-20	8.827E-20	2.305E-19	3.548E-19	5.764E-19
U-234	U-238	6.383E-15	2.300E-23	6.879E-23	1.595E-22	4.674E-22	1.271E-21	3.318E-21	5.107E-21	8.296E-21
U-234	U-238	3.196E-07	1.152E-15	3.445E-15	7.985E-15	2.341E-14	6.362E-14	1.662E-13	2.557E-13	4.154E-13
U-234	U-238	4.219E-13	1.520E-21	4.547E-21	1.054E-20	3.090E-20	8.398E-20	2.193E-19	3.376E-19	5.484E-19

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	2.188E-23	6.545E-23	1.517E-22	4.447E-22	1.209E-21	3.157E-21	4.859E-21	7.893E-21
U-234	U-238	6.713E-11	2.419E-19	7.235E-19	1.677E-18	4.916E-18	1.336E-17	3.490E-17	5.371E-17	8.726E-17
U-234	U-238	8.862E-17	3.193E-25	9.550E-25	2.214E-24	6.489E-24	1.764E-23	4.607E-23	7.090E-23	1.152E-22
U-234	U-238	1.276E-18	4.596E-27	1.375E-26	3.187E-26	9.341E-26	2.539E-25	6.631E-25	1.021E-24	1.658E-24
U-234	U-238	3.200E-10	1.153E-18	3.449E-18	7.995E-18	2.343E-17	6.370E-17	1.664E-16	2.560E-16	4.159E-16
U-234	U-238	4.224E-16	1.522E-24	4.552E-24	1.055E-23	3.093E-23	8.408E-23	2.196E-22	3.380E-22	5.490E-22
U-234	U-238	6.080E-18	2.191E-26	6.553E-26	1.519E-25	4.452E-25	1.210E-24	3.161E-24	4.865E-24	7.903E-24
U-234	U-238	9.980E-01	3.596E-09	1.076E-08	2.493E-08	7.308E-08	1.987E-07	5.188E-07	7.985E-07	1.297E-06
U-234	U-238	1.317E-06	4.746E-15	1.420E-14	3.291E-14	9.647E-14	2.622E-13	6.848E-13	1.054E-12	1.712E-12
U-234	U-238	1.896E-08	6.832E-17	2.044E-16	4.737E-16	1.389E-15	3.774E-15	9.858E-15	1.517E-14	2.465E-14
U-234	U-238	2.096E-04	7.553E-13	2.259E-12	5.237E-12	1.535E-11	4.173E-11	1.090E-10	1.677E-10	2.725E-10
U-234	U-238	2.767E-10	9.970E-19	2.982E-18	6.913E-18	2.026E-17	5.508E-17	1.438E-16	2.214E-16	3.597E-16
U-234	U-238	3.983E-12	1.435E-20	4.292E-20	9.950E-20	2.917E-19	7.928E-19	2.071E-18	3.187E-18	5.177E-18
U-234	U-238	1.994E-04	7.186E-13	2.149E-12	4.983E-12	1.461E-11	3.970E-11	1.037E-10	1.596E-10	2.592E-10
U-234	U-238	2.633E-10	9.485E-19	2.837E-18	6.577E-18	1.928E-17	5.240E-17	1.369E-16	2.106E-16	3.422E-16
U-234	U-238	3.789E-12	1.365E-20	4.084E-20	9.467E-20	2.775E-19	7.543E-19	1.970E-18	3.032E-18	4.925E-18
U-234	U-238	4.189E-08	1.509E-16	4.515E-16	1.047E-15	3.068E-15	8.339E-15	2.178E-14	3.352E-14	5.445E-14
U-234	U-238	5.530E-14	1.992E-22	5.959E-22	1.381E-21	4.049E-21	1.101E-20	2.875E-20	4.424E-20	7.187E-20
U-234	U-238	7.959E-16	2.868E-24	8.578E-24	1.988E-23	5.829E-23	1.584E-22	4.138E-22	6.368E-22	1.035E-21
U-234	U-238	1.997E-07	7.195E-16	2.152E-15	4.989E-15	1.462E-14	3.975E-14	1.038E-13	1.598E-13	2.595E-13
U-234	U-238	2.636E-13	9.497E-22	2.841E-21	6.585E-21	1.930E-20	5.247E-20	1.370E-19	2.109E-19	3.426E-19
U-234	U-238	3.794E-15	1.367E-23	4.089E-23	9.478E-23	2.778E-22	7.552E-22	1.972E-21	3.036E-21	4.931E-21
U-234	ΣDOSE(j)		2.553E-03	2.544E-03	2.527E-03	2.469E-03	2.311E-03	1.832E-03	9.431E-04	4.606E-04
U-234	U-234	1.899E-08	4.850E-11	4.834E-11	4.802E-11	4.692E-11	4.390E-11	3.479E-11	1.790E-11	8.727E-12
U-234	U-234	2.100E-04	5.362E-07	5.344E-07	5.308E-07	5.186E-07	4.853E-07	3.846E-07	1.979E-07	9.648E-08
U-234	ΣDOSE(j)		5.362E-07	5.344E-07	5.309E-07	5.187E-07	4.853E-07	3.846E-07	1.979E-07	9.648E-08
U-234	U-234	2.771E-10	7.077E-13	7.054E-13	7.007E-13	6.846E-13	6.406E-13	5.077E-13	2.613E-13	1.273E-13
U-234	U-234	3.989E-12	1.019E-14	1.015E-14	1.009E-14	9.854E-15	9.221E-15	7.308E-15	3.760E-15	1.833E-15
U-234	ΣDOSE(j)		7.179E-13	7.155E-13	7.108E-13	6.945E-13	6.498E-13	5.150E-13	2.650E-13	1.292E-13
U-234	U-234	1.998E-04	5.101E-07	5.084E-07	5.051E-07	4.934E-07	4.617E-07	3.659E-07	1.883E-07	9.179E-08
U-234	U-234	2.637E-10	6.734E-13	6.711E-13	6.667E-13	6.514E-13	6.095E-13	4.830E-13	2.486E-13	1.212E-13
U-234	ΣDOSE(j)		5.101E-07	5.084E-07	5.051E-07	4.934E-07	4.617E-07	3.659E-07	1.883E-07	9.179E-08
U-234	U-234	3.795E-12	9.692E-15	9.660E-15	9.596E-15	9.376E-15	8.773E-15	6.953E-15	3.578E-15	1.744E-15
U-234	U-234	4.196E-08	1.071E-10	1.068E-10	1.061E-10	1.036E-10	9.698E-11	7.686E-11	3.955E-11	1.928E-11
U-234	ΣDOSE(j)		1.072E-10	1.068E-10	1.061E-10	1.037E-10	9.699E-11	7.687E-11	3.956E-11	1.928E-11
U-234	U-234	5.538E-14	1.414E-16	1.410E-16	1.400E-16	1.368E-16	1.280E-16	1.015E-16	5.221E-17	2.545E-17
U-234	U-234	7.972E-16	2.036E-18	2.029E-18	2.016E-18	1.969E-18	1.843E-18	1.460E-18	7.515E-19	3.663E-19
U-234	ΣDOSE(j)		1.435E-16	1.430E-16	1.420E-16	1.388E-16	1.299E-16	1.029E-16	5.296E-17	2.582E-17
U-234	U-234	2.000E-07	5.107E-10	5.090E-10	5.057E-10	4.940E-10	4.623E-10	3.664E-10	1.885E-10	9.190E-11
U-234	U-234	2.640E-13	6.742E-16	6.719E-16	6.675E-16	6.521E-16	6.102E-16	4.836E-16	2.489E-16	1.213E-16
U-234	ΣDOSE(j)		5.107E-10	5.090E-10	5.057E-10	4.940E-10	4.623E-10	3.664E-10	1.885E-10	9.190E-11
U-234	U-234	3.800E-15	9.704E-18	9.672E-18	9.608E-18	9.387E-18	8.783E-18	6.961E-18	3.582E-18	1.746E-18

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	1.203E-09	1.199E-09	1.191E-09	1.163E-09	1.089E-09	8.630E-10	4.443E-10	2.245E-10
U-238	U-238	1.599E-03	5.346E-03	5.328E-03	5.293E-03	5.172E-03	4.840E-03	3.836E-03	1.975E-03	1.940E-04
U-238	ΣDOSE(j)		5.346E-03	5.328E-03	5.293E-03	5.172E-03	4.840E-03	3.836E-03	1.975E-03	1.940E-04
U-238	U-238	2.111E-09	7.057E-09	7.034E-09	6.987E-09	6.827E-09	6.388E-09	5.064E-09	2.607E-09	2.561E-10
U-238	U-238	3.039E-11	1.016E-10	1.012E-10	1.006E-10	9.826E-11	9.195E-11	7.289E-11	3.753E-11	3.686E-12
U-238	ΣDOSE(j)		7.159E-09	7.135E-09	7.088E-09	6.925E-09	6.480E-09	5.137E-09	2.645E-09	2.598E-10
U-238	U-238	3.359E-07	1.123E-06	1.119E-06	1.112E-06	1.086E-06	1.017E-06	8.058E-07	4.149E-07	4.075E-08
U-238	U-238	4.434E-13	1.482E-12	1.477E-12	1.468E-12	1.434E-12	1.342E-12	1.064E-12	5.476E-13	5.379E-14
U-238	ΣDOSE(j)		1.123E-06	1.119E-06	1.112E-06	1.086E-06	1.017E-06	8.058E-07	4.149E-07	4.075E-08
U-238	U-238	6.383E-15	2.134E-14	2.127E-14	2.112E-14	2.064E-14	1.931E-14	1.531E-14	7.883E-15	7.743E-16
U-238	U-238	3.196E-07	1.068E-06	1.065E-06	1.058E-06	1.034E-06	9.671E-07	7.666E-07	3.947E-07	3.877E-08
U-238	ΣDOSE(j)		1.068E-06	1.065E-06	1.058E-06	1.034E-06	9.671E-07	7.666E-07	3.947E-07	3.877E-08
U-238	U-238	4.219E-13	1.410E-12	1.406E-12	1.396E-12	1.364E-12	1.277E-12	1.012E-12	5.210E-13	5.118E-14
U-238	U-238	6.073E-15	2.030E-14	2.023E-14	2.010E-14	1.964E-14	1.838E-14	1.457E-14	7.500E-15	7.367E-16
U-238	ΣDOSE(j)		1.431E-12	1.426E-12	1.416E-12	1.384E-12	1.295E-12	1.027E-12	5.285E-13	5.192E-14
U-238	U-238	6.713E-11	2.244E-10	2.237E-10	2.222E-10	2.171E-10	2.031E-10	1.610E-10	8.291E-11	8.144E-12
U-238	U-238	8.862E-17	2.962E-16	2.952E-16	2.933E-16	2.865E-16	2.681E-16	2.126E-16	1.094E-16	1.075E-17
U-238	ΣDOSE(j)		2.244E-10	2.237E-10	2.222E-10	2.171E-10	2.031E-10	1.610E-10	8.291E-11	8.144E-12
U-238	U-238	1.276E-18	4.264E-18	4.250E-18	4.222E-18	4.125E-18	3.860E-18	3.059E-18	1.575E-18	1.547E-19
U-238	U-238	3.200E-10	1.070E-09	1.066E-09	1.059E-09	1.035E-09	9.683E-10	7.675E-10	3.952E-10	3.882E-11
U-238	ΣDOSE(j)		1.070E-09	1.066E-09	1.059E-09	1.035E-09	9.683E-10	7.675E-10	3.952E-10	3.882E-11
U-238	U-238	4.224E-16	1.412E-15	1.407E-15	1.398E-15	1.366E-15	1.278E-15	1.013E-15	5.217E-16	5.124E-17
U-238	U-238	6.080E-18	2.032E-17	2.026E-17	2.012E-17	1.966E-17	1.840E-17	1.458E-17	7.509E-18	7.376E-19
U-238	ΣDOSE(j)		1.432E-15	1.428E-15	1.418E-15	1.386E-15	1.297E-15	1.028E-15	5.292E-16	5.198E-17
U-238	U-238	9.980E-01	6.155E-02	6.134E-02	6.094E-02	5.954E-02	5.571E-02	4.416E-02	2.274E-02	2.584E-03
U-238	U-238	1.317E-06	8.124E-08	8.097E-08	8.044E-08	7.859E-08	7.354E-08	5.829E-08	3.001E-08	3.410E-09
U-238	ΣDOSE(j)		6.155E-02	6.134E-02	6.094E-02	5.954E-02	5.571E-02	4.416E-02	2.274E-02	2.584E-03
U-238	U-238	1.896E-08	1.169E-09	1.166E-09	1.158E-09	1.131E-09	1.059E-09	8.391E-10	4.320E-10	4.909E-11
U-238	U-238	2.096E-04	1.293E-05	1.288E-05	1.280E-05	1.251E-05	1.170E-05	9.276E-06	4.776E-06	5.427E-07
U-238	ΣDOSE(j)		1.293E-05	1.289E-05	1.280E-05	1.251E-05	1.170E-05	9.277E-06	4.777E-06	5.427E-07
U-238	U-238	2.767E-10	1.706E-11	1.701E-11	1.690E-11	1.651E-11	1.545E-11	1.224E-11	6.304E-12	7.163E-13
U-238	U-238	3.983E-12	2.456E-13	2.448E-13	2.432E-13	2.376E-13	2.223E-13	1.762E-13	9.075E-14	1.031E-14
U-238	ΣDOSE(j)		1.731E-11	1.725E-11	1.714E-11	1.674E-11	1.567E-11	1.242E-11	6.395E-12	7.266E-13
U-238	U-238	1.994E-04	1.230E-05	1.226E-05	1.218E-05	1.190E-05	1.113E-05	8.825E-06	4.544E-06	5.163E-07
U-238	U-238	2.633E-10	1.624E-11	1.618E-11	1.607E-11	1.571E-11	1.470E-11	1.165E-11	5.998E-12	6.815E-13
U-238	ΣDOSE(j)		1.230E-05	1.226E-05	1.218E-05	1.190E-05	1.113E-05	8.825E-06	4.544E-06	5.163E-07
U-238	U-238	3.789E-12	2.337E-13	2.329E-13	2.314E-13	2.261E-13	2.115E-13	1.677E-13	8.634E-14	9.810E-15

Summary : Recreator (Sheep Camp)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	2.583E-09	2.575E-09	2.558E-09	2.499E-09	2.339E-09	1.854E-09	9.544E-10	1.084E-10
U-238	ΣDOSE(j)		2.584E-09	2.575E-09	2.558E-09	2.499E-09	2.339E-09	1.854E-09	9.545E-10	1.085E-10
U-238	U-238	5.530E-14	3.410E-15	3.399E-15	3.376E-15	3.299E-15	3.087E-15	2.447E-15	1.260E-15	1.432E-16
U-238	U-238	7.959E-16	4.909E-17	4.892E-17	4.860E-17	4.748E-17	4.443E-17	3.522E-17	1.813E-17	2.061E-18
U-238	ΣDOSE(j)		3.459E-15	3.448E-15	3.425E-15	3.346E-15	3.131E-15	2.482E-15	1.278E-15	1.452E-16
U-238	U-238	1.997E-07	1.231E-08	1.227E-08	1.219E-08	1.191E-08	1.115E-08	8.836E-09	4.550E-09	5.169E-10
U-238	U-238	2.636E-13	1.625E-14	1.620E-14	1.609E-14	1.572E-14	1.471E-14	1.166E-14	6.005E-15	6.824E-16
U-238	ΣDOSE(j)		1.231E-08	1.227E-08	1.219E-08	1.191E-08	1.115E-08	8.836E-09	4.550E-09	5.169E-10
U-238	U-238	3.794E-15	2.340E-16	2.332E-16	2.317E-16	2.263E-16	2.118E-16	1.679E-16	8.644E-17	9.822E-18

THF(i) is the thread fraction of the parent nuclide.

Summary : Recreator (Sheep Camp)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	1.000E+00	9.676E-01	9.061E-01	7.197E-01	3.728E-01	3.731E-02	5.192E-05	5.222E-15
Pb-210	Pb-210	1.320E-06	1.320E-06	1.277E-06	1.196E-06	9.501E-07	4.922E-07	4.924E-08	6.854E-11	6.893E-21
Pb-210	Ra-226	9.996E-01	0.000E+00	3.066E-02	8.878E-02	2.621E-01	5.669E-01	7.450E-01	4.470E-01	6.266E-02
Pb-210	Ra-226	2.100E-04	0.000E+00	6.440E-06	1.865E-05	5.505E-05	1.191E-04	1.565E-04	9.388E-05	1.316E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	6.127E-06	1.774E-05	5.237E-05	1.133E-04	1.489E-04	8.932E-05	1.252E-05
Pb-210	Ra-226	4.196E-08	0.000E+00	1.287E-09	3.727E-09	1.100E-08	2.380E-08	3.127E-08	1.876E-08	2.630E-09
Pb-210	Ra-226	2.000E-07	0.000E+00	6.134E-09	1.776E-08	5.244E-08	1.134E-07	1.491E-07	8.943E-08	1.254E-08
Pb-210	Th-230	9.996E-01	0.000E+00	6.681E-06	5.872E-05	6.018E-04	4.360E-03	2.602E-02	7.734E-02	1.357E-01
Pb-210	Th-230	2.100E-04	0.000E+00	1.403E-09	1.233E-08	1.264E-07	9.158E-07	5.466E-06	1.624E-05	2.850E-05
Pb-210	Th-230	1.998E-04	0.000E+00	1.335E-09	1.174E-08	1.203E-07	8.713E-07	5.200E-06	1.546E-05	2.712E-05
Pb-210	Th-230	4.196E-08	0.000E+00	2.804E-13	2.465E-12	2.526E-11	1.830E-10	1.092E-09	3.246E-09	5.696E-09
Pb-210	Th-230	2.000E-07	0.000E+00	1.337E-12	1.175E-11	1.204E-10	8.724E-10	5.206E-09	1.547E-08	2.715E-08
Pb-210	U-234	9.996E-01	0.000E+00	2.052E-11	5.434E-10	1.883E-08	4.240E-07	9.087E-06	8.090E-05	3.195E-04
Pb-210	U-234	2.100E-04	0.000E+00	4.310E-15	1.141E-13	3.955E-12	8.905E-11	1.909E-09	1.699E-08	6.712E-08
Pb-210	U-234	1.998E-04	0.000E+00	4.101E-15	1.086E-13	3.763E-12	8.473E-11	1.816E-09	1.617E-08	6.386E-08
Pb-210	U-234	4.196E-08	0.000E+00	8.614E-19	2.281E-17	7.903E-16	1.780E-14	3.814E-13	3.396E-12	1.341E-11
Pb-210	U-234	2.000E-07	0.000E+00	4.106E-18	1.087E-16	3.767E-15	8.483E-14	1.818E-12	1.619E-11	6.394E-11
Pb-210	U-238	1.599E-03	0.000E+00	2.320E-20	1.848E-18	2.153E-16	1.486E-14	1.116E-12	3.044E-11	3.212E-10
Pb-210	U-238	3.359E-07	0.000E+00	4.874E-24	3.882E-22	4.522E-20	3.121E-18	2.343E-16	6.394E-15	6.746E-14
Pb-210	U-238	3.196E-07	0.000E+00	4.637E-24	3.693E-22	4.302E-20	2.970E-18	2.229E-16	6.084E-15	6.419E-14
Pb-210	U-238	6.713E-11	0.000E+00	9.740E-28	7.758E-26	9.036E-24	6.238E-22	4.683E-20	1.278E-18	1.348E-17
Pb-210	U-238	3.200E-10	0.000E+00	4.643E-27	3.698E-25	4.307E-23	2.973E-21	2.232E-19	6.091E-18	6.426E-17
Pb-210	U-238	9.980E-01	0.000E+00	1.448E-17	1.153E-15	1.343E-13	9.273E-12	6.961E-10	1.900E-08	2.004E-07
Pb-210	U-238	2.096E-04	0.000E+00	3.041E-21	2.422E-19	2.822E-17	1.948E-15	1.462E-13	3.990E-12	4.210E-11
Pb-210	U-238	1.994E-04	0.000E+00	2.894E-21	2.305E-19	2.685E-17	1.853E-15	1.391E-13	3.796E-12	4.005E-11
Pb-210	U-238	4.189E-08	0.000E+00	6.078E-25	4.841E-23	5.639E-21	3.893E-19	2.922E-17	7.974E-16	8.413E-15
Pb-210	U-238	1.997E-07	0.000E+00	2.897E-24	2.308E-22	2.688E-20	1.855E-18	1.393E-16	3.801E-15	4.010E-14
Pb-210	ΣS(j):		1.000E+00	9.983E-01	9.949E-01	9.825E-01	9.444E-01	8.086E-01	5.246E-01	1.988E-01
Po-210	Pb-210	1.000E+00	0.000E+00	8.172E-01	9.104E-01	7.263E-01	3.763E-01	3.765E-02	5.240E-05	5.269E-15
Po-210	Po-210	1.000E+00	1.000E+00	1.579E-01	3.935E-03	9.623E-09	8.911E-25	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	0.000E+00	1.660E-02	7.271E-02	2.479E-01	5.564E-01	7.389E-01	4.437E-01	6.220E-02
Po-210	Ra-226	2.100E-04	0.000E+00	3.486E-06	1.527E-05	5.206E-05	1.169E-04	1.552E-04	9.319E-05	1.307E-05
Po-210	Ra-226	1.998E-04	0.000E+00	3.317E-06	1.453E-05	4.953E-05	1.112E-04	1.477E-04	8.867E-05	1.243E-05
Po-210	Ra-226	4.196E-08	0.000E+00	6.967E-10	3.052E-09	1.040E-08	2.336E-08	3.101E-08	1.862E-08	2.611E-09
Po-210	Ra-226	2.000E-07	0.000E+00	3.321E-09	1.455E-08	4.959E-08	1.113E-07	1.478E-07	8.877E-08	1.245E-08
Po-210	Th-230	9.996E-01	0.000E+00	2.726E-06	4.114E-05	5.383E-04	4.191E-03	2.562E-02	7.655E-02	1.345E-01
Po-210	Th-230	2.100E-04	0.000E+00	5.727E-10	8.641E-09	1.131E-07	8.803E-07	5.381E-06	1.608E-05	2.825E-05
Po-210	Th-230	1.998E-04	0.000E+00	5.448E-10	8.221E-09	1.076E-07	8.375E-07	5.120E-06	1.530E-05	2.687E-05
Po-210	Th-230	4.196E-08	0.000E+00	1.144E-13	1.727E-12	2.260E-11	1.759E-10	1.075E-09	3.213E-09	5.645E-09
Po-210	Th-230	2.000E-07	0.000E+00	5.455E-13	8.231E-12	1.077E-10	8.386E-10	5.126E-09	1.532E-08	2.691E-08
Po-210	U-234	9.996E-01	0.000E+00	6.770E-12	3.343E-10	1.601E-08	4.001E-07	8.895E-06	7.995E-05	3.166E-04
Po-210	U-234	2.100E-04	0.000E+00	1.422E-15	7.021E-14	3.363E-12	8.403E-11	1.868E-09	1.679E-08	6.650E-08
Po-210	U-234	1.998E-04	0.000E+00	1.353E-15	6.680E-14	3.199E-12	7.995E-11	1.778E-09	1.598E-08	6.327E-08
Po-210	U-234	4.196E-08	0.000E+00	2.842E-19	1.403E-17	6.720E-16	1.679E-14	3.734E-13	3.356E-12	1.329E-11
Po-210	U-234	2.000E-07	0.000E+00	1.355E-18	6.688E-17	3.203E-15	8.005E-14	1.780E-12	1.600E-11	6.335E-11
Po-210	U-238	1.599E-03	0.000E+00	6.444E-21	1.016E-18	1.745E-16	1.378E-14	1.086E-12	3.003E-11	3.181E-10
Po-210	U-238	3.359E-07	0.000E+00	1.353E-24	2.133E-22	3.666E-20	2.893E-18	2.281E-16	6.308E-15	6.682E-14
Po-210	U-238	3.196E-07	0.000E+00	1.288E-24	2.030E-22	3.487E-20	2.753E-18	2.170E-16	6.002E-15	6.358E-14

Summary : Recreator (Sheep Camp)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	0.000E+00	2.705E-28	4.263E-26	7.325E-24	5.782E-22	4.558E-20	1.261E-18	1.335E-17
Po-210	U-238	3.200E-10	0.000E+00	1.289E-27	2.032E-25	3.492E-23	2.756E-21	2.173E-19	6.009E-18	6.366E-17
Po-210	U-238	9.980E-01	0.000E+00	4.021E-18	6.337E-16	1.089E-13	8.596E-12	6.776E-10	1.874E-08	1.985E-07
Po-210	U-238	2.096E-04	0.000E+00	8.445E-22	1.331E-19	2.287E-17	1.806E-15	1.423E-13	3.936E-12	4.170E-11
Po-210	U-238	1.994E-04	0.000E+00	8.035E-22	1.266E-19	2.176E-17	1.718E-15	1.354E-13	3.745E-12	3.967E-11
Po-210	U-238	4.189E-08	0.000E+00	1.688E-25	2.660E-23	4.571E-21	3.608E-19	2.844E-17	7.866E-16	8.333E-15
Po-210	U-238	1.997E-07	0.000E+00	8.045E-25	1.268E-22	2.179E-20	1.720E-18	1.356E-16	3.750E-15	3.972E-14
Po-210	ΣS(j):		1.000E+00	9.917E-01	9.871E-01	9.748E-01	9.371E-01	8.024E-01	5.206E-01	1.971E-01
Pb-210	Pb-210	1.900E-08	1.900E-08	1.839E-08	1.722E-08	1.368E-08	7.084E-09	7.088E-10	9.865E-13	9.921E-23
Pb-210	Ra-226	1.899E-08	0.000E+00	5.825E-10	1.687E-09	4.979E-09	1.077E-08	1.415E-08	8.492E-09	1.191E-09
Pb-210	Ra-226	3.989E-12	0.000E+00	1.224E-13	3.543E-13	1.046E-12	2.263E-12	2.973E-12	1.784E-12	2.501E-13
Pb-210	Ra-226	3.795E-12	0.000E+00	1.164E-13	3.371E-13	9.951E-13	2.153E-12	2.829E-12	1.697E-12	2.379E-13
Pb-210	Ra-226	7.972E-16	0.000E+00	2.445E-17	7.080E-17	2.090E-16	4.521E-16	5.941E-16	3.565E-16	4.997E-17
Pb-210	Ra-226	3.800E-15	0.000E+00	1.166E-16	3.375E-16	9.963E-16	2.155E-15	2.832E-15	1.699E-15	2.382E-16
Pb-210	Th-230	1.899E-08	0.000E+00	1.269E-13	1.116E-12	1.143E-11	8.284E-11	4.944E-10	1.469E-09	2.578E-09
Pb-210	Th-230	3.989E-12	0.000E+00	2.666E-17	2.344E-16	2.402E-15	1.740E-14	1.038E-13	3.087E-13	5.415E-13
Pb-210	Th-230	3.795E-12	0.000E+00	2.537E-17	2.230E-16	2.285E-15	1.656E-14	9.880E-14	2.937E-13	5.152E-13
Pb-210	Th-230	7.972E-16	0.000E+00	5.328E-21	4.683E-20	4.800E-19	3.477E-18	2.075E-17	6.168E-17	1.082E-16
Pb-210	Th-230	3.800E-15	0.000E+00	2.540E-20	2.232E-19	2.288E-18	1.658E-17	9.892E-17	2.940E-16	5.158E-16
Pb-210	U-234	1.899E-08	0.000E+00	3.899E-19	1.033E-17	3.577E-16	8.056E-15	1.727E-13	1.537E-12	6.071E-12
Pb-210	U-234	3.989E-12	0.000E+00	8.189E-23	2.169E-21	7.514E-20	1.692E-18	3.627E-17	3.229E-16	1.275E-15
Pb-210	U-234	3.795E-12	0.000E+00	7.792E-23	2.063E-21	7.149E-20	1.610E-18	3.450E-17	3.072E-16	1.213E-15
Pb-210	U-234	7.972E-16	0.000E+00	1.637E-26	4.334E-25	1.502E-23	3.381E-22	7.247E-21	6.452E-20	2.548E-19
Pb-210	U-234	3.800E-15	0.000E+00	7.801E-26	2.066E-24	7.158E-23	1.612E-21	3.455E-20	3.076E-19	1.215E-18
Pb-210	U-238	3.039E-11	0.000E+00	4.409E-28	3.512E-26	4.090E-24	2.824E-22	2.120E-20	5.784E-19	6.103E-18
Pb-210	U-238	6.383E-15	0.000E+00	9.261E-32	7.376E-30	8.592E-28	5.931E-26	4.452E-24	1.215E-22	1.282E-21
Pb-210	U-238	6.073E-15	0.000E+00	8.811E-32	7.018E-30	8.174E-28	5.643E-26	4.236E-24	1.156E-22	1.220E-21
Pb-210	U-238	1.276E-18	0.000E+00	1.851E-35	1.474E-33	1.717E-31	1.185E-29	8.897E-28	2.428E-26	2.562E-25
Pb-210	U-238	6.080E-18	0.000E+00	8.821E-35	7.026E-33	8.184E-31	5.650E-29	4.241E-27	1.157E-25	1.221E-24
Pb-210	U-238	1.896E-08	0.000E+00	2.751E-25	2.191E-23	2.552E-21	1.762E-19	1.323E-17	3.609E-16	3.808E-15
Pb-210	U-238	3.983E-12	0.000E+00	5.779E-29	4.603E-27	5.361E-25	3.701E-23	2.778E-21	7.581E-20	7.999E-19
Pb-210	U-238	3.789E-12	0.000E+00	5.498E-29	4.379E-27	5.101E-25	3.521E-23	2.643E-21	7.213E-20	7.610E-19
Pb-210	U-238	7.959E-16	0.000E+00	1.155E-32	9.198E-31	1.071E-28	7.396E-27	5.552E-25	1.515E-23	1.598E-22
Pb-210	U-238	3.794E-15	0.000E+00	5.505E-32	4.384E-30	5.107E-28	3.525E-26	2.646E-24	7.222E-23	7.619E-22
Pb-210	ΣS(j):		1.900E-08	1.897E-08	1.890E-08	1.867E-08	1.794E-08	1.536E-08	9.968E-09	3.776E-09
Ra-226	Ra-226	9.996E-01	9.996E-01	9.968E-01	9.912E-01	9.719E-01	9.189E-01	7.550E-01	4.306E-01	6.037E-02
Ra-226	Ra-226	1.319E-06	1.319E-06	1.316E-06	1.308E-06	1.283E-06	1.213E-06	9.965E-07	5.684E-07	7.968E-08
Ra-226	Th-230	9.996E-01	0.000E+00	4.324E-04	1.294E-03	4.270E-03	1.246E-02	3.773E-02	8.763E-02	1.437E-01
Ra-226	Th-230	1.319E-06	0.000E+00	5.708E-10	1.708E-09	5.636E-09	1.644E-08	4.981E-08	1.157E-07	1.897E-07
Ra-226	Th-230	1.899E-08	0.000E+00	8.216E-12	2.458E-11	8.113E-11	2.367E-10	7.169E-10	1.665E-09	2.731E-09
Ra-226	U-234	9.996E-01	0.000E+00	1.987E-09	1.781E-08	1.951E-07	1.686E-06	1.627E-05	9.938E-05	3.425E-04
Ra-226	U-234	1.319E-06	0.000E+00	2.623E-15	2.351E-14	2.575E-13	2.225E-12	2.147E-11	1.312E-10	4.521E-10
Ra-226	U-234	1.899E-08	0.000E+00	3.775E-17	3.384E-16	3.706E-15	3.203E-14	3.091E-13	1.888E-12	6.508E-12
Ra-226	U-238	1.599E-03	0.000E+00	2.991E-18	8.038E-17	2.928E-15	7.542E-14	2.371E-12	4.053E-11	3.504E-10
Ra-226	U-238	2.111E-09	0.000E+00	3.948E-24	1.061E-22	3.865E-21	9.955E-20	3.130E-18	5.351E-17	4.625E-16
Ra-226	U-238	3.039E-11	0.000E+00	5.683E-26	1.527E-24	5.563E-23	1.433E-21	4.505E-20	7.701E-19	6.657E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.866E-15	5.015E-14	1.827E-12	4.706E-11	1.480E-09	2.529E-08	2.186E-07

Summary : Recreator (Sheep Camp)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	0.000E+00	2.464E-21	6.620E-20	2.412E-18	6.212E-17	1.953E-15	3.339E-14	2.886E-13
Ra-226	U-238	1.896E-08	0.000E+00	3.546E-23	9.529E-22	3.471E-20	8.941E-19	2.811E-17	4.806E-16	4.154E-15
Ra-226	ΣS(j):		9.996E-01	9.972E-01	9.925E-01	9.762E-01	9.313E-01	7.927E-01	5.184E-01	2.044E-01
Pb-210	Ra-226	1.319E-06	0.000E+00	4.047E-08	1.172E-07	3.459E-07	7.484E-07	9.833E-07	5.900E-07	8.271E-08
Pb-210	Ra-226	2.771E-10	0.000E+00	8.501E-12	2.461E-11	7.266E-11	1.572E-10	2.065E-10	1.239E-10	1.737E-11
Pb-210	Ra-226	2.637E-10	0.000E+00	8.088E-12	2.342E-11	6.913E-11	1.496E-10	1.965E-10	1.179E-10	1.653E-11
Pb-210	Ra-226	5.538E-14	0.000E+00	1.699E-15	4.919E-15	1.452E-14	3.141E-14	4.128E-14	2.476E-14	3.472E-15
Pb-210	Ra-226	2.640E-13	0.000E+00	8.097E-15	2.345E-14	6.922E-14	1.497E-13	1.967E-13	1.180E-13	1.655E-14
Pb-210	Th-230	1.319E-06	0.000E+00	8.818E-12	7.752E-11	7.944E-10	5.755E-09	3.435E-08	1.021E-07	1.791E-07
Pb-210	Th-230	2.771E-10	0.000E+00	1.852E-15	1.628E-14	1.669E-13	1.209E-12	7.215E-12	2.144E-11	3.762E-11
Pb-210	Th-230	2.637E-10	0.000E+00	1.762E-15	1.549E-14	1.588E-13	1.150E-12	6.864E-12	2.040E-11	3.579E-11
Pb-210	Th-230	5.538E-14	0.000E+00	3.702E-19	3.254E-18	3.335E-17	2.416E-16	1.442E-15	4.285E-15	7.518E-15
Pb-210	Th-230	2.640E-13	0.000E+00	1.764E-18	1.551E-17	1.589E-16	1.152E-15	6.872E-15	2.043E-14	3.584E-14
Pb-210	U-234	1.319E-06	0.000E+00	2.709E-17	7.173E-16	2.485E-14	5.597E-13	1.200E-11	1.068E-10	4.218E-10
Pb-210	U-234	2.771E-10	0.000E+00	5.689E-21	1.507E-19	5.220E-18	1.176E-16	2.519E-15	2.243E-14	8.860E-14
Pb-210	U-234	2.637E-10	0.000E+00	5.413E-21	1.433E-19	4.967E-18	1.118E-16	2.397E-15	2.134E-14	8.429E-14
Pb-210	U-234	5.538E-14	0.000E+00	1.137E-24	3.011E-23	1.043E-21	2.349E-20	5.035E-19	4.483E-18	1.771E-17
Pb-210	U-234	2.640E-13	0.000E+00	5.420E-24	1.435E-22	4.973E-21	1.120E-19	2.400E-18	2.137E-17	8.439E-17
Pb-210	U-238	2.111E-09	0.000E+00	3.063E-26	2.440E-24	2.842E-22	1.962E-20	1.473E-18	4.019E-17	4.240E-16
Pb-210	U-238	4.434E-13	0.000E+00	6.434E-30	5.124E-28	5.969E-26	4.120E-24	3.093E-22	8.441E-21	8.905E-20
Pb-210	U-238	4.219E-13	0.000E+00	6.121E-30	4.875E-28	5.679E-26	3.920E-24	2.943E-22	8.031E-21	8.473E-20
Pb-210	U-238	8.862E-17	0.000E+00	1.286E-33	1.024E-31	1.193E-29	8.234E-28	6.181E-26	1.687E-24	1.780E-23
Pb-210	U-238	4.224E-16	0.000E+00	6.129E-33	4.881E-31	5.686E-29	3.925E-27	2.946E-25	8.040E-24	8.483E-23
Pb-210	U-238	1.317E-06	0.000E+00	1.911E-23	1.522E-21	1.773E-19	1.224E-17	9.189E-16	2.508E-14	2.646E-13
Pb-210	U-238	2.767E-10	0.000E+00	4.015E-27	3.198E-25	3.725E-23	2.571E-21	1.930E-19	5.267E-18	5.557E-17
Pb-210	U-238	2.633E-10	0.000E+00	3.820E-27	3.042E-25	3.544E-23	2.446E-21	1.836E-19	5.011E-18	5.287E-17
Pb-210	U-238	5.530E-14	0.000E+00	8.023E-31	6.390E-29	7.443E-27	5.138E-25	3.857E-23	1.053E-21	1.110E-20
Pb-210	U-238	2.636E-13	0.000E+00	3.824E-30	3.046E-28	3.548E-26	2.449E-24	1.838E-22	5.017E-21	5.293E-20
Pb-210	ΣS(j):		0.000E+00	4.050E-08	1.173E-07	3.469E-07	7.544E-07	1.018E-06	6.925E-07	2.624E-07
Ra-226	Ra-226	1.899E-08	1.899E-08	1.894E-08	1.883E-08	1.847E-08	1.746E-08	1.434E-08	8.182E-09	1.147E-09
Ra-226	Ra-226	2.100E-04	2.100E-04	2.094E-04	2.082E-04	2.041E-04	1.930E-04	1.586E-04	9.045E-05	1.268E-05
Ra-226	ΣS(j):		2.100E-04	2.094E-04	2.082E-04	2.042E-04	1.930E-04	1.586E-04	9.046E-05	1.268E-05
Ra-226	Ra-226	2.771E-10	2.771E-10	2.764E-10	2.748E-10	2.695E-10	2.548E-10	2.093E-10	1.194E-10	1.674E-11
Ra-226	Ra-226	3.989E-12	3.989E-12	3.978E-12	3.956E-12	3.879E-12	3.667E-12	3.013E-12	1.719E-12	2.409E-13
Ra-226	ΣS(j):		2.811E-10	2.803E-10	2.788E-10	2.734E-10	2.584E-10	2.123E-10	1.211E-10	1.698E-11
Ra-226	Ra-226	1.998E-04	1.998E-04	1.992E-04	1.981E-04	1.942E-04	1.836E-04	1.509E-04	8.606E-05	1.206E-05
Ra-226	Ra-226	2.637E-10	2.637E-10	2.629E-10	2.615E-10	2.564E-10	2.424E-10	1.991E-10	1.136E-10	1.592E-11
Ra-226	Th-230	1.998E-04	0.000E+00	8.642E-08	2.585E-07	8.533E-07	2.489E-06	7.541E-06	1.751E-05	2.872E-05
Ra-226	Th-230	2.637E-10	0.000E+00	1.141E-13	3.412E-13	1.126E-12	3.286E-12	9.954E-12	2.312E-11	3.792E-11
Ra-226	Th-230	3.795E-12	0.000E+00	1.642E-15	4.912E-15	1.621E-14	4.730E-14	1.433E-13	3.327E-13	5.458E-13
Ra-226	U-234	1.998E-04	0.000E+00	3.971E-13	3.559E-12	3.898E-11	3.368E-10	3.251E-09	1.986E-08	6.845E-08
Ra-226	U-234	2.637E-10	0.000E+00	5.241E-19	4.698E-18	5.146E-17	4.446E-16	4.291E-15	2.622E-14	9.036E-14
Ra-226	U-234	3.795E-12	0.000E+00	7.544E-21	6.762E-20	7.407E-19	6.400E-18	6.177E-17	3.773E-16	1.301E-15
Ra-226	U-238	3.196E-07	0.000E+00	5.977E-22	1.606E-20	5.851E-19	1.507E-17	4.739E-16	8.100E-15	7.002E-14
Ra-226	U-238	4.219E-13	0.000E+00	7.890E-28	2.120E-26	7.724E-25	1.989E-23	6.255E-22	1.069E-20	9.243E-20

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Ra-226	U-238	6.073E-15	0.000E+00	1.136E-29	3.052E-28	1.112E-26	2.864E-25	9.003E-24	1.539E-22	1.330E-21
Ra-226	U-238	1.994E-04	0.000E+00	3.730E-19	1.002E-17	3.651E-16	9.404E-15	2.957E-13	5.055E-12	4.369E-11
Ra-226	U-238	2.633E-10	0.000E+00	4.923E-25	1.323E-23	4.820E-22	1.241E-20	3.903E-19	6.672E-18	5.768E-17
Ra-226	U-238	3.789E-12	0.000E+00	7.087E-27	1.904E-25	6.937E-24	1.787E-22	5.618E-21	9.604E-20	8.302E-19
Ra-226	ΣS(j):		1.998E-04	1.993E-04	1.983E-04	1.951E-04	1.861E-04	1.584E-04	1.036E-04	4.086E-05
Ra-226	Ra-226	3.795E-12	3.795E-12	3.785E-12	3.764E-12	3.690E-12	3.489E-12	2.867E-12	1.635E-12	2.292E-13
Ra-226	Ra-226	4.196E-08	4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	ΣS(j):		4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	Ra-226	5.538E-14	5.538E-14	5.523E-14	5.492E-14	5.385E-14	5.091E-14	4.183E-14	2.386E-14	3.345E-15
Ra-226	Ra-226	7.972E-16	7.972E-16	7.950E-16	7.905E-16	7.751E-16	7.328E-16	6.021E-16	3.434E-16	4.814E-17
Ra-226	ΣS(j):		5.618E-14	5.602E-14	5.571E-14	5.463E-14	5.164E-14	4.243E-14	2.420E-14	3.393E-15
Ra-226	Ra-226	2.000E-07	2.000E-07	1.994E-07	1.983E-07	1.945E-07	1.838E-07	1.511E-07	8.616E-08	1.208E-08
Ra-226	Ra-226	2.640E-13	2.640E-13	2.633E-13	2.618E-13	2.567E-13	2.427E-13	1.994E-13	1.137E-13	1.594E-14
Ra-226	Th-230	2.000E-07	0.000E+00	8.652E-11	2.588E-10	8.543E-10	2.492E-09	7.550E-09	1.753E-08	2.876E-08
Ra-226	Th-230	2.640E-13	0.000E+00	1.142E-16	3.417E-16	1.128E-15	3.290E-15	9.966E-15	2.314E-14	3.796E-14
Ra-226	Th-230	3.800E-15	0.000E+00	1.644E-18	4.918E-18	1.623E-17	4.736E-17	1.434E-16	3.331E-16	5.464E-16
Ra-226	U-234	2.000E-07	0.000E+00	3.975E-16	3.563E-15	3.903E-14	3.372E-13	3.255E-12	1.988E-11	6.853E-11
Ra-226	U-234	2.640E-13	0.000E+00	5.248E-22	4.704E-21	5.152E-20	4.452E-19	4.296E-18	2.625E-17	9.046E-17
Ra-226	U-234	3.800E-15	0.000E+00	7.553E-24	6.770E-23	7.416E-22	6.408E-21	6.184E-20	3.778E-19	1.302E-18
Ra-226	U-238	3.200E-10	0.000E+00	5.984E-25	1.608E-23	5.858E-22	1.509E-20	4.744E-19	8.110E-18	7.011E-17
Ra-226	U-238	4.224E-16	0.000E+00	7.899E-31	2.123E-29	7.733E-28	1.992E-26	6.262E-25	1.071E-23	9.254E-23
Ra-226	U-238	6.080E-18	0.000E+00	1.137E-32	3.056E-31	1.113E-29	2.867E-28	9.014E-27	1.541E-25	1.332E-24
Ra-226	U-238	1.997E-07	0.000E+00	3.734E-22	1.003E-20	3.656E-19	9.416E-18	2.960E-16	5.061E-15	4.375E-14
Ra-226	U-238	2.636E-13	0.000E+00	4.929E-28	1.325E-26	4.826E-25	1.243E-23	3.908E-22	6.680E-21	5.775E-20
Ra-226	U-238	3.794E-15	0.000E+00	7.095E-30	1.907E-28	6.946E-27	1.789E-25	5.625E-24	9.615E-23	8.312E-22
Ra-226	ΣS(j):		2.000E-07	1.995E-07	1.986E-07	1.953E-07	1.863E-07	1.586E-07	1.037E-07	4.091E-08
Ra-226	Ra-226	3.800E-15	3.800E-15	3.789E-15	3.768E-15	3.695E-15	3.493E-15	2.870E-15	1.637E-15	2.295E-16
Th-230	Th-230	9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.984E-01	9.960E-01	9.877E-01
Th-230	Th-230	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.318E-06	1.315E-06	1.304E-06
Th-230	U-234	9.996E-01	0.000E+00	9.176E-06	2.744E-05	9.040E-05	2.624E-04	7.816E-04	1.742E-03	2.644E-03
Th-230	U-234	1.319E-06	0.000E+00	1.211E-11	3.622E-11	1.193E-10	3.464E-10	1.032E-09	2.299E-09	3.490E-09
Th-230	U-234	1.899E-08	0.000E+00	1.743E-13	5.213E-13	1.718E-12	4.986E-12	1.485E-11	3.310E-11	5.023E-11
Th-230	U-234	2.100E-04	0.000E+00	1.927E-09	5.763E-09	1.899E-08	5.512E-08	1.642E-07	3.659E-07	5.553E-07
Th-230	U-234	2.771E-10	0.000E+00	2.544E-15	7.607E-15	2.506E-14	7.275E-14	2.167E-13	4.830E-13	7.330E-13
Th-230	U-234	3.989E-12	0.000E+00	3.662E-17	1.095E-16	3.608E-16	1.047E-15	3.119E-15	6.952E-15	1.055E-14
Th-230	U-234	1.998E-04	0.000E+00	1.834E-09	5.483E-09	1.807E-08	5.244E-08	1.562E-07	3.481E-07	5.283E-07
Th-230	U-234	2.637E-10	0.000E+00	2.421E-15	7.238E-15	2.385E-14	6.922E-14	2.062E-13	4.595E-13	6.974E-13
Th-230	U-234	3.795E-12	0.000E+00	3.484E-17	1.042E-16	3.432E-16	9.963E-16	2.968E-15	6.614E-15	1.004E-14
Th-230	U-234	4.196E-08	0.000E+00	3.852E-13	1.152E-12	3.795E-12	1.101E-11	3.281E-11	7.312E-11	1.110E-10
Th-230	U-234	5.538E-14	0.000E+00	5.084E-19	1.520E-18	5.009E-18	1.454E-17	4.331E-17	9.651E-17	1.465E-16
Th-230	U-234	7.972E-16	0.000E+00	7.318E-21	2.188E-20	7.210E-20	2.093E-19	6.233E-19	1.389E-18	2.108E-18
Th-230	U-234	2.000E-07	0.000E+00	1.836E-12	5.490E-12	1.809E-11	5.250E-11	1.564E-10	3.485E-10	5.290E-10
Th-230	U-234	2.640E-13	0.000E+00	2.424E-18	7.246E-18	2.388E-17	6.930E-17	2.064E-16	4.601E-16	6.982E-16
Th-230	U-234	3.800E-15	0.000E+00	3.488E-20	1.043E-19	3.437E-19	9.975E-19	2.971E-18	6.622E-18	1.005E-17

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	0.000E+00	2.072E-14	1.856E-13	2.031E-12	1.749E-11	1.668E-10	9.884E-10	3.158E-09
Th-230	U-238	2.111E-09	0.000E+00	2.734E-20	2.450E-19	2.680E-18	2.308E-17	2.202E-16	1.305E-15	4.168E-15
Th-230	U-238	3.039E-11	0.000E+00	3.936E-22	3.527E-21	3.858E-20	3.323E-19	3.170E-18	1.878E-17	5.999E-17
Th-230	U-238	3.359E-07	0.000E+00	4.351E-18	3.899E-17	4.265E-16	3.673E-15	3.504E-14	2.076E-13	6.632E-13
Th-230	U-238	4.434E-13	0.000E+00	5.743E-24	5.146E-23	5.630E-22	4.848E-21	4.626E-20	2.740E-19	8.754E-19
Th-230	U-238	6.383E-15	0.000E+00	8.267E-26	7.408E-25	8.104E-24	6.979E-23	6.658E-22	3.945E-21	1.260E-20
Th-230	U-238	3.196E-07	0.000E+00	4.140E-18	3.709E-17	4.058E-16	3.495E-15	3.334E-14	1.975E-13	6.310E-13
Th-230	U-238	4.219E-13	0.000E+00	5.464E-24	4.896E-23	5.357E-22	4.613E-21	4.401E-20	2.607E-19	8.329E-19
Th-230	U-238	6.073E-15	0.000E+00	7.866E-26	7.048E-25	7.710E-24	6.640E-23	6.335E-22	3.753E-21	1.199E-20
Th-230	U-238	6.713E-11	0.000E+00	8.695E-22	7.791E-21	8.524E-20	7.340E-19	7.003E-18	4.149E-17	1.325E-16
Th-230	U-238	8.862E-17	0.000E+00	1.148E-27	1.028E-26	1.125E-25	9.689E-25	9.244E-24	5.476E-23	1.749E-22
Th-230	U-238	1.276E-18	0.000E+00	1.652E-29	1.480E-28	1.620E-27	1.395E-26	1.331E-25	7.883E-25	2.518E-24
Th-230	U-238	3.200E-10	0.000E+00	4.145E-21	3.714E-20	4.063E-19	3.499E-18	3.338E-17	1.978E-16	6.318E-16
Th-230	U-238	4.224E-16	0.000E+00	5.471E-27	4.902E-26	5.363E-25	4.619E-24	4.406E-23	2.610E-22	8.339E-22
Th-230	U-238	6.080E-18	0.000E+00	7.875E-29	7.056E-28	7.720E-27	6.648E-26	6.342E-25	3.757E-24	1.200E-23
Th-230	U-238	9.980E-01	0.000E+00	1.293E-11	1.158E-10	1.267E-09	1.091E-08	1.041E-07	6.168E-07	1.970E-06
Th-230	U-238	1.317E-06	0.000E+00	1.706E-17	1.529E-16	1.673E-15	1.440E-14	1.374E-13	8.141E-13	2.601E-12
Th-230	U-238	1.896E-08	0.000E+00	2.456E-19	2.201E-18	2.408E-17	2.073E-16	1.978E-15	1.172E-14	3.744E-14
Th-230	U-238	2.096E-04	0.000E+00	2.715E-15	2.433E-14	2.662E-13	2.292E-12	2.187E-11	1.295E-10	4.138E-10
Th-230	U-238	2.767E-10	0.000E+00	3.584E-21	3.211E-20	3.513E-19	3.025E-18	2.886E-17	1.710E-16	5.463E-16
Th-230	U-238	3.983E-12	0.000E+00	5.159E-23	4.622E-22	5.057E-21	4.355E-20	4.155E-19	2.461E-18	7.863E-18
Th-230	U-238	1.994E-04	0.000E+00	2.583E-15	2.315E-14	2.532E-13	2.181E-12	2.080E-11	1.233E-10	3.937E-10
Th-230	U-238	2.633E-10	0.000E+00	3.410E-21	3.055E-20	3.343E-19	2.878E-18	2.746E-17	1.627E-16	5.197E-16
Th-230	U-238	3.789E-12	0.000E+00	4.908E-23	4.398E-22	4.811E-21	4.143E-20	3.953E-19	2.342E-18	7.481E-18
Th-230	U-238	4.189E-08	0.000E+00	5.426E-19	4.862E-18	5.319E-17	4.580E-16	4.370E-15	2.589E-14	8.270E-14
Th-230	U-238	5.530E-14	0.000E+00	7.162E-25	6.417E-24	7.021E-23	6.046E-22	5.768E-21	3.417E-20	1.092E-19
Th-230	U-238	7.959E-16	0.000E+00	1.031E-26	9.237E-26	1.011E-24	8.703E-24	8.303E-23	4.919E-22	1.571E-21
Th-230	U-238	1.997E-07	0.000E+00	2.586E-18	2.317E-17	2.535E-16	2.183E-15	2.083E-14	1.234E-13	3.942E-13
Th-230	U-238	2.636E-13	0.000E+00	3.414E-24	3.059E-23	3.347E-22	2.882E-21	2.749E-20	1.629E-19	5.204E-19
Th-230	U-238	3.794E-15	0.000E+00	4.914E-26	4.403E-25	4.817E-24	4.148E-23	3.958E-22	2.345E-21	7.490E-21
Th-230	ΣS(j):		9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.977E-01	9.903E-01
Th-230	Th-230	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.897E-08	1.892E-08	1.877E-08
Th-230	Th-230	2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Th-230	ΣS(j):		2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Ra-226	Th-230	2.100E-04	0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.926E-06	1.841E-05	3.019E-05
Ra-226	Th-230	3.989E-12	0.000E+00	1.726E-15	5.163E-15	1.704E-14	4.971E-14	1.506E-13	3.497E-13	5.736E-13
Ra-226	U-234	2.100E-04	0.000E+00	4.173E-13	3.741E-12	4.097E-11	3.540E-10	3.417E-09	2.087E-08	7.195E-08
Ra-226	U-234	2.771E-10	0.000E+00	5.509E-19	4.938E-18	5.408E-17	4.673E-16	4.510E-15	2.755E-14	9.497E-14
Ra-226	U-234	3.989E-12	0.000E+00	7.929E-21	7.107E-20	7.785E-19	6.727E-18	6.492E-17	3.966E-16	1.367E-15
Ra-226	U-238	3.359E-07	0.000E+00	6.282E-22	1.688E-20	6.150E-19	1.584E-17	4.980E-16	8.514E-15	7.360E-14
Ra-226	U-238	4.434E-13	0.000E+00	8.293E-28	2.228E-26	8.118E-25	2.091E-23	6.574E-22	1.124E-20	9.715E-20
Ra-226	U-238	6.383E-15	0.000E+00	1.194E-29	3.208E-28	1.169E-26	3.010E-25	9.463E-24	1.618E-22	1.398E-21
Ra-226	U-238	2.096E-04	0.000E+00	3.920E-19	1.053E-17	3.838E-16	9.885E-15	3.108E-13	5.313E-12	4.592E-11
Ra-226	U-238	2.767E-10	0.000E+00	5.175E-25	1.391E-23	5.066E-22	1.305E-20	4.102E-19	7.013E-18	6.062E-17
Ra-226	U-238	3.983E-12	0.000E+00	7.448E-27	2.002E-25	7.292E-24	1.878E-22	5.905E-21	1.009E-19	8.726E-19
Ra-226	ΣS(j):		0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.929E-06	1.843E-05	3.026E-05

Summary : Recreator (Sheep Camp)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.770E-10	2.768E-10	2.762E-10	2.738E-10
Th-230	Th-230	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.988E-12	3.984E-12	3.975E-12	3.942E-12
Th-230	ΣS(j):		2.811E-10	2.811E-10	2.811E-10	2.811E-10	2.810E-10	2.808E-10	2.801E-10	2.778E-10
Ra-226	Th-230	2.771E-10	0.000E+00	1.199E-13	3.587E-13	1.184E-12	3.454E-12	1.046E-11	2.430E-11	3.985E-11
Th-230	Th-230	1.998E-04	1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	2.637E-10	2.637E-10	2.637E-10	2.637E-10	2.636E-10	2.636E-10	2.634E-10	2.627E-10	2.605E-10
Th-230	ΣS(j):		1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.794E-12	3.791E-12	3.782E-12	3.750E-12
Th-230	Th-230	4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.194E-08	4.191E-08	4.181E-08	4.146E-08
Th-230	ΣS(j):		4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.191E-08	4.181E-08	4.146E-08
Ra-226	Th-230	4.196E-08	0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.229E-10	1.584E-09	3.678E-09	6.033E-09
Ra-226	Th-230	7.972E-16	0.000E+00	3.449E-19	1.032E-18	3.405E-18	9.935E-18	3.009E-17	6.989E-17	1.146E-16
Ra-226	U-234	4.196E-08	0.000E+00	8.340E-17	7.475E-16	8.188E-15	7.075E-14	6.828E-13	4.172E-12	1.438E-11
Ra-226	U-234	5.538E-14	0.000E+00	1.101E-22	9.868E-22	1.081E-20	9.339E-20	9.014E-19	5.506E-18	1.898E-17
Ra-226	U-234	7.972E-16	0.000E+00	1.585E-24	1.420E-23	1.556E-22	1.344E-21	1.297E-20	7.926E-20	2.732E-19
Ra-226	U-238	6.713E-11	0.000E+00	1.255E-25	3.374E-24	1.229E-22	3.166E-21	9.953E-20	1.701E-18	1.471E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.657E-31	4.453E-30	1.622E-28	4.179E-27	1.314E-25	2.246E-24	1.941E-23
Ra-226	U-238	1.276E-18	0.000E+00	2.385E-33	6.410E-32	2.335E-30	6.015E-29	1.891E-27	3.233E-26	2.794E-25
Ra-226	U-238	4.189E-08	0.000E+00	7.834E-23	2.105E-21	7.669E-20	1.975E-18	6.211E-17	1.062E-15	9.178E-15
Ra-226	U-238	5.530E-14	0.000E+00	1.034E-28	2.779E-27	1.012E-25	2.607E-24	8.198E-23	1.401E-21	1.211E-20
Ra-226	U-238	7.959E-16	0.000E+00	1.488E-30	4.000E-29	1.457E-27	3.753E-26	1.180E-24	2.017E-23	1.744E-22
Ra-226	ΣS(j):		0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.230E-10	1.585E-09	3.683E-09	6.048E-09
Th-230	Th-230	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.536E-14	5.532E-14	5.519E-14	5.473E-14
Th-230	Th-230	7.972E-16	7.972E-16	7.972E-16	7.972E-16	7.971E-16	7.969E-16	7.962E-16	7.943E-16	7.877E-16
Th-230	ΣS(j):		5.618E-14	5.618E-14	5.618E-14	5.618E-14	5.616E-14	5.611E-14	5.598E-14	5.551E-14
Ra-226	Th-230	5.538E-14	0.000E+00	2.396E-17	7.168E-17	2.366E-16	6.902E-16	2.091E-15	4.855E-15	7.964E-15
Th-230	Th-230	2.000E-07	2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.639E-13	2.637E-13	2.631E-13	2.609E-13
Th-230	ΣS(j):		2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.799E-15	3.795E-15	3.786E-15	3.755E-15
U-234	U-234	9.996E-01	9.996E-01	9.963E-01	9.897E-01	9.669E-01	9.048E-01	7.171E-01	3.690E-01	3.607E-02
U-234	U-234	1.319E-06	1.319E-06	1.315E-06	1.306E-06	1.276E-06	1.194E-06	9.465E-07	4.871E-07	4.761E-08
U-234	U-238	1.599E-03	0.000E+00	4.501E-09	1.341E-08	4.368E-08	1.226E-07	3.240E-07	5.003E-07	1.632E-07
U-234	U-238	2.111E-09	0.000E+00	5.941E-15	1.770E-14	5.766E-14	1.619E-13	4.276E-13	6.604E-13	2.154E-13
U-234	U-238	3.039E-11	0.000E+00	8.551E-17	2.548E-16	8.299E-16	2.330E-15	6.155E-15	9.505E-15	3.100E-15
U-234	U-238	3.359E-07	0.000E+00	9.453E-13	2.817E-12	9.175E-12	2.576E-11	6.805E-11	1.051E-10	3.427E-11
U-234	U-238	4.434E-13	0.000E+00	1.248E-18	3.719E-18	1.211E-17	3.400E-17	8.982E-17	1.387E-16	4.524E-17
U-234	U-238	6.383E-15	0.000E+00	1.796E-20	5.353E-20	1.743E-19	4.894E-19	1.293E-18	1.997E-18	6.512E-19
U-234	U-238	3.196E-07	0.000E+00	8.994E-13	2.680E-12	8.729E-12	2.451E-11	6.474E-11	9.997E-11	3.261E-11
U-234	U-238	4.219E-13	0.000E+00	1.187E-18	3.538E-18	1.152E-17	3.235E-17	8.546E-17	1.320E-16	4.304E-17

Summary : Recreator (Sheep Camp)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	0.000E+00	1.709E-20	5.093E-20	1.659E-19	4.656E-19	1.230E-18	1.900E-18	6.195E-19
U-234	U-238	6.713E-11	0.000E+00	1.889E-16	5.630E-16	1.834E-15	5.147E-15	1.360E-14	2.100E-14	6.849E-15
U-234	U-238	8.862E-17	0.000E+00	2.494E-22	7.432E-22	2.420E-21	6.794E-21	1.795E-20	2.772E-20	9.040E-21
U-234	U-238	1.276E-18	0.000E+00	3.589E-24	1.070E-23	3.484E-23	9.780E-23	2.584E-22	3.990E-22	1.301E-22
U-234	U-238	3.200E-10	0.000E+00	9.005E-16	2.684E-15	8.740E-15	2.453E-14	6.482E-14	1.001E-13	3.265E-14
U-234	U-238	4.224E-16	0.000E+00	1.189E-21	3.542E-21	1.154E-20	3.239E-20	8.556E-20	1.321E-19	4.309E-20
U-234	U-238	6.080E-18	0.000E+00	1.711E-23	5.099E-23	1.661E-22	4.662E-22	1.232E-21	1.902E-21	6.203E-22
U-234	U-238	9.980E-01	0.000E+00	2.808E-06	8.369E-06	2.726E-05	7.652E-05	2.022E-04	3.122E-04	1.018E-04
U-234	U-238	1.317E-06	0.000E+00	3.707E-12	1.105E-11	3.598E-11	1.010E-10	2.668E-10	4.121E-10	1.344E-10
U-234	U-238	1.896E-08	0.000E+00	5.336E-14	1.590E-13	5.179E-13	1.454E-12	3.841E-12	5.931E-12	1.934E-12
U-234	U-238	2.096E-04	0.000E+00	5.899E-10	1.758E-09	5.725E-09	1.607E-08	4.246E-08	6.557E-08	2.139E-08
U-234	U-238	2.767E-10	0.000E+00	7.787E-16	2.320E-15	7.557E-15	2.122E-14	5.605E-14	8.655E-14	2.823E-14
U-234	U-238	3.983E-12	0.000E+00	1.121E-17	3.340E-17	1.088E-16	3.054E-16	8.068E-16	1.246E-15	4.063E-16
U-234	U-238	1.994E-04	0.000E+00	5.612E-10	1.673E-09	5.447E-09	1.529E-08	4.040E-08	6.238E-08	2.035E-08
U-234	U-238	2.633E-10	0.000E+00	7.408E-16	2.208E-15	7.190E-15	2.018E-14	5.333E-14	8.235E-14	2.686E-14
U-234	U-238	3.789E-12	0.000E+00	1.066E-17	3.178E-17	1.035E-16	2.905E-16	7.676E-16	1.185E-15	3.866E-16
U-234	U-238	4.189E-08	0.000E+00	1.179E-13	3.513E-13	1.144E-12	3.212E-12	8.486E-12	1.310E-11	4.274E-12
U-234	U-238	5.530E-14	0.000E+00	1.556E-19	4.637E-19	1.510E-18	4.240E-18	1.120E-17	1.730E-17	5.641E-18
U-234	U-238	7.959E-16	0.000E+00	2.240E-21	6.675E-21	2.174E-20	6.102E-20	1.612E-19	2.490E-19	8.120E-20
U-234	U-238	1.997E-07	0.000E+00	5.619E-13	1.675E-12	5.454E-12	1.531E-11	4.045E-11	6.246E-11	2.037E-11
U-234	U-238	2.636E-13	0.000E+00	7.417E-19	2.210E-18	7.199E-18	2.021E-17	5.339E-17	8.245E-17	2.689E-17
U-234	U-238	3.794E-15	0.000E+00	1.068E-20	3.182E-20	1.036E-19	2.909E-19	7.685E-19	1.187E-18	3.871E-19
U-234	ΣS(j):		9.996E-01	9.963E-01	9.897E-01	9.670E-01	9.049E-01	7.173E-01	3.693E-01	3.617E-02
U-234	U-234	1.899E-08	1.899E-08	1.893E-08	1.880E-08	1.837E-08	1.719E-08	1.362E-08	7.011E-09	6.853E-10
U-234	U-234	2.100E-04	2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.900E-04	1.506E-04	7.750E-05	7.576E-06
U-234	ΣS(j):		2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.901E-04	1.506E-04	7.751E-05	7.576E-06
U-234	U-234	2.771E-10	2.771E-10	2.762E-10	2.744E-10	2.681E-10	2.509E-10	1.988E-10	1.023E-10	1.000E-11
U-234	U-234	3.989E-12	3.989E-12	3.976E-12	3.950E-12	3.859E-12	3.611E-12	2.862E-12	1.473E-12	1.439E-13
U-234	ΣS(j):		2.811E-10	2.802E-10	2.783E-10	2.719E-10	2.545E-10	2.017E-10	1.038E-10	1.014E-11
U-234	U-234	1.998E-04	1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	2.637E-10	2.637E-10	2.628E-10	2.611E-10	2.551E-10	2.387E-10	1.892E-10	9.733E-11	9.514E-12
U-234	ΣS(j):		1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	3.795E-12	3.795E-12	3.783E-12	3.758E-12	3.671E-12	3.435E-12	2.723E-12	1.401E-12	1.369E-13
U-234	U-234	4.196E-08	4.196E-08	4.182E-08	4.154E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	ΣS(j):		4.196E-08	4.182E-08	4.155E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	U-234	5.538E-14	5.538E-14	5.520E-14	5.484E-14	5.357E-14	5.013E-14	3.973E-14	2.044E-14	1.998E-15
U-234	U-234	7.972E-16	7.972E-16	7.946E-16	7.893E-16	7.712E-16	7.216E-16	5.719E-16	2.943E-16	2.876E-17
U-234	ΣS(j):		5.618E-14	5.600E-14	5.562E-14	5.435E-14	5.085E-14	4.030E-14	2.074E-14	2.027E-15
U-234	U-234	2.000E-07	2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	2.640E-13	2.640E-13	2.631E-13	2.614E-13	2.554E-13	2.390E-13	1.894E-13	9.745E-14	9.526E-15
U-234	ΣS(j):		2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	3.800E-15	3.800E-15	3.787E-15	3.762E-15	3.676E-15	3.440E-15	2.726E-15	1.403E-15	1.371E-16

Summary : Recreator (Sheep Camp)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	5.450E-07	5.432E-07	5.396E-07	5.272E-07	4.933E-07	3.911E-07	2.014E-07	1.972E-08
U-238	U-238	1.599E-03	1.599E-03	1.594E-03	1.583E-03	1.547E-03	1.448E-03	1.148E-03	5.909E-04	5.787E-05
U-238	ΣS(j):		1.600E-03	1.595E-03	1.584E-03	1.548E-03	1.448E-03	1.148E-03	5.911E-04	5.789E-05
U-238	U-238	2.111E-09	2.111E-09	2.104E-09	2.090E-09	2.042E-09	1.911E-09	1.515E-09	7.800E-10	7.639E-11
U-238	U-238	3.039E-11	3.039E-11	3.029E-11	3.009E-11	2.940E-11	2.751E-11	2.180E-11	1.123E-11	1.100E-12
U-238	ΣS(j):		2.142E-09	2.134E-09	2.120E-09	2.072E-09	1.939E-09	1.537E-09	7.912E-10	7.749E-11
U-238	U-238	3.359E-07	3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	4.434E-13	4.434E-13	4.420E-13	4.390E-13	4.290E-13	4.014E-13	3.182E-13	1.638E-13	1.605E-14
U-238	ΣS(j):		3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	6.383E-15	6.383E-15	6.362E-15	6.319E-15	6.174E-15	5.778E-15	4.580E-15	2.358E-15	2.310E-16
U-238	U-238	3.196E-07	3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	ΣS(j):		3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	U-238	4.219E-13	4.219E-13	4.205E-13	4.177E-13	4.081E-13	3.819E-13	3.027E-13	1.559E-13	1.527E-14
U-238	U-238	6.073E-15	6.073E-15	6.053E-15	6.012E-15	5.874E-15	5.497E-15	4.357E-15	2.244E-15	2.197E-16
U-238	ΣS(j):		4.280E-13	4.265E-13	4.237E-13	4.140E-13	3.874E-13	3.071E-13	1.581E-13	1.549E-14
U-238	U-238	6.713E-11	6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	8.862E-17	8.862E-17	8.832E-17	8.774E-17	8.572E-17	8.022E-17	6.359E-17	3.274E-17	3.206E-18
U-238	ΣS(j):		6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	1.276E-18	1.276E-18	1.271E-18	1.263E-18	1.234E-18	1.155E-18	9.153E-19	4.712E-19	4.615E-20
U-238	U-238	3.200E-10	3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	ΣS(j):		3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	U-238	4.224E-16	4.224E-16	4.210E-16	4.182E-16	4.086E-16	3.824E-16	3.031E-16	1.561E-16	1.528E-17
U-238	U-238	6.080E-18	6.080E-18	6.060E-18	6.020E-18	5.882E-18	5.504E-18	4.363E-18	2.246E-18	2.200E-19
U-238	ΣS(j):		4.285E-16	4.271E-16	4.242E-16	4.145E-16	3.879E-16	3.075E-16	1.583E-16	1.550E-17
U-238	U-238	9.980E-01	9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.317E-06	1.317E-06	1.313E-06	1.304E-06	1.274E-06	1.192E-06	9.453E-07	4.867E-07	4.767E-08
U-238	ΣS(j):		9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.896E-08	1.896E-08	1.890E-08	1.877E-08	1.834E-08	1.716E-08	1.361E-08	7.005E-09	6.861E-10
U-238	U-238	2.096E-04	2.096E-04	2.089E-04	2.075E-04	2.028E-04	1.898E-04	1.504E-04	7.744E-05	7.585E-06
U-238	ΣS(j):		2.096E-04	2.089E-04	2.076E-04	2.028E-04	1.898E-04	1.504E-04	7.745E-05	7.586E-06
U-238	U-238	2.767E-10	2.767E-10	2.758E-10	2.740E-10	2.677E-10	2.505E-10	1.985E-10	1.022E-10	1.001E-11
U-238	U-238	3.983E-12	3.983E-12	3.970E-12	3.943E-12	3.853E-12	3.605E-12	2.858E-12	1.471E-12	1.441E-13
U-238	ΣS(j):		2.807E-10	2.798E-10	2.779E-10	2.715E-10	2.541E-10	2.014E-10	1.037E-10	1.016E-11
U-238	U-238	1.994E-04	1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	2.633E-10	2.633E-10	2.624E-10	2.607E-10	2.547E-10	2.383E-10	1.889E-10	9.726E-11	9.526E-12
U-238	ΣS(j):		1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	3.789E-12	3.789E-12	3.777E-12	3.752E-12	3.666E-12	3.430E-12	2.719E-12	1.400E-12	1.371E-13

Summary : Recreator (Sheep Camp)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	4.189E-08	4.175E-08	4.148E-08	4.052E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	ΣS(j):		4.189E-08	4.176E-08	4.148E-08	4.053E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	U-238	5.530E-14	5.530E-14	5.511E-14	5.475E-14	5.349E-14	5.006E-14	3.968E-14	2.043E-14	2.001E-15
U-238	U-238	7.959E-16	7.959E-16	7.933E-16	7.880E-16	7.699E-16	7.205E-16	5.711E-16	2.941E-16	2.880E-17
U-238	ΣS(j):		5.609E-14	5.591E-14	5.554E-14	5.426E-14	5.078E-14	4.025E-14	2.072E-14	2.030E-15
U-238	U-238	1.997E-07	1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	2.636E-13	2.636E-13	2.627E-13	2.610E-13	2.550E-13	2.386E-13	1.891E-13	9.738E-14	9.537E-15
U-238	ΣS(j):		1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	3.794E-15	3.794E-15	3.781E-15	3.756E-15	3.670E-15	3.434E-15	2.722E-15	1.402E-15	1.373E-16

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 280.40 seconds

Total water/soil iteration failures = 3.370E+02.

RESidual RADioactivity (ResRad) Dose-Modeling Output
Recreator (Hunter): Soil + Game and Fowl

Summary : Recreator_Soil + Game and Fowl

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Time = 3.000E+00	15
Time = 1.000E+01	16
Time = 3.000E+01	17
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Summary : Recreator_Soil + Game and Fowl

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1 (1)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1 (2)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1 (3)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1 (4)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1 (5)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1 (6)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1 (7)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1 (8)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1 (9)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1 (10)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1 (11)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1 (12)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1 (13)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1 (14)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1 (15)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1 (16)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1 (17)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1 (18)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1 (19)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1 (20)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.129E-02	2.077E-02	DCF2 (1)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2 (2)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2 (3)
B-1	Po-210	1.580E-02	1.582E-02	DCF2 (4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2 (5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2 (8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2 (11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2 (14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2 (17)
B-1	Th-230	3.760E-01	3.759E-01	DCF2 (20)
B-1	U-234	3.480E-02	3.479E-02	DCF2 (35)
B-1	U-238	2.970E-02	2.973E-02	DCF2 (50)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2 (51)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2 (66)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	2.585E-03	2.575E-03	DCF3 (1)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3 (2)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3 (3)
D-1	Po-210	4.480E-03	4.477E-03	DCF3 (4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3 (8)
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3 (11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3 (14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3 (17)
D-1	Th-230	7.920E-04	7.918E-04	DCF3 (20)
D-1	U-234	1.830E-04	1.831E-04	DCF3 (35)

Summary : Recreator_Soil + Game and Fowl

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	U-238	1.650E-04	1.650E-04	DCF3(50)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(51)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(66)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(35,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(35,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(35,3)
D-34				

Summary : Recreator_Soil + Game and Fowl

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(50,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(50,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(50,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(66,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(66,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(66,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(35,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(35,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(50,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(50,2)
D-5				

Summary : Recreator_Soil + Game and Fowl

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5				
D-5	U-238+D1 , fish	1.000E+01	1.000E+01	BIOFAC(66,1)
D-5	U-238+D1 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(66,2)
D-5				

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Recreator_Soil + Game and Fowl

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.200E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(35)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(50)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(35)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(50)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ

Summary : Recreator_Soil + Game and Fowl

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(4)
R016	Unsat. zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.632E-02	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(5)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(20)
R016	Unsat. zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)

Summary : Recreator_Soil + Game and Fowl

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (35)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (35,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (35)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (35)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (35)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (50)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (50,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (50)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (50)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (50)
R017	Inhalation rate (m**3/yr)	2.520E+02	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.800E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)

Summary : Recreator_Soil + Game and Fowl

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	5.440E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	2.000E+00	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	1.179E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	6.450E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	4.120E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	0.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Summary : Recreator_Soil + Game and Fowl

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary : Recreator_Soil + Game and Fowl

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Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	active
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Recreator_Soil + Game and Fowl

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Pb-210	1.000E+00
Thickness:	2.00 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	1.000E+00
		Th-230	1.000E+00
		U-234	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	9.983E-01	9.926E-01	9.883E-01	9.743E-01	9.333E-01	7.969E-01	5.187E-01	2.326E-01
M(t):	8.319E-02	8.271E-02	8.236E-02	8.119E-02	7.778E-02	6.641E-02	4.322E-02	1.939E-02

Maximum TDOSE(t): 9.983E-01 mrem/yr at t = 0.000E+00 years

Summary : Recreator_Soil + Game and Fowl

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.742E-04	0.0003	5.108E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.206E-01	0.3212	0.000E+00	0.0000	3.745E-04	0.0004
Po-210	9.260E-07	0.0000	1.254E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.358E-01	0.2362	0.000E+00	0.0000	1.553E-04	0.0002
Ra-226	3.758E-01	0.3764	6.210E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.426E-02	0.0544	0.000E+00	0.0000	8.417E-05	0.0001
Th-230	1.221E-04	0.0001	6.543E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.835E-03	0.0018	0.000E+00	0.0000	6.021E-05	0.0001
U-234	1.309E-05	0.0000	6.045E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.492E-03	0.0015	0.000E+00	0.0000	1.389E-05	0.0000
U-238	5.851E-03	0.0059	5.164E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.447E-03	0.0014	0.000E+00	0.0000	1.347E-05	0.0000
Total	3.820E-01	0.3827	8.921E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	6.155E-01	0.6165	0.000E+00	0.0000	7.016E-04	0.0007

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.213E-01	0.3219
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.360E-01	0.2364
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.301E-01	0.4308
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.083E-03	0.0021
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-03	0.0015
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.317E-03	0.0073
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.983E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator_Soil + Game and Fowl

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.661E-04	0.0003	5.968E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.008E-01	0.5045	0.000E+00	0.0000	4.893E-04	0.0005
Po-210	1.462E-07	0.0000	1.981E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.725E-02	0.0375	0.000E+00	0.0000	2.453E-05	0.0000
Ra-226	3.747E-01	0.3775	6.370E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.785E-02	0.0684	0.000E+00	0.0000	9.800E-05	0.0001
Th-230	2.847E-04	0.0003	6.543E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.861E-03	0.0019	0.000E+00	0.0000	6.025E-05	0.0001
U-234	1.305E-05	0.0000	6.026E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.487E-03	0.0015	0.000E+00	0.0000	1.384E-05	0.0000
U-238	5.832E-03	0.0059	5.147E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.443E-03	0.0015	0.000E+00	0.0000	1.342E-05	0.0000
Total	3.811E-01	0.3840	8.914E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	6.107E-01	0.6152	0.000E+00	0.0000	6.994E-04	0.0007

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.016E-01	0.5053
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.727E-02	0.0376
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.427E-01	0.4460
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-03	0.0023
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.520E-03	0.0015
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.293E-03	0.0073
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.926E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator_Soil + Game and Fowl

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.493E-04	0.0003	5.770E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.032E-01	0.5091	0.000E+00	0.0000	4.807E-04	0.0005
Po-210	3.645E-09	0.0000	4.937E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.285E-04	0.0009	0.000E+00	0.0000	6.114E-07	0.0000
Ra-226	3.726E-01	0.3770	6.703E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.929E-02	0.1005	0.000E+00	0.0000	1.280E-04	0.0001
Th-230	6.084E-04	0.0006	6.543E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.934E-03	0.0020	0.000E+00	0.0000	6.034E-05	0.0001
U-234	1.297E-05	0.0000	5.987E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.478E-03	0.0015	0.000E+00	0.0000	1.375E-05	0.0000
U-238	5.793E-03	0.0059	5.113E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.433E-03	0.0015	0.000E+00	0.0000	1.333E-05	0.0000
Total	3.793E-01	0.3838	8.901E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	6.082E-01	0.6154	0.000E+00	0.0000	6.968E-04	0.0007

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.039E-01	0.5099
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.291E-04	0.0009
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.721E-01	0.4776
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0027
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.510E-03	0.0015
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.245E-03	0.0073
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.883E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator_Soil + Game and Fowl

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.980E-04	0.0002	4.587E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.005E-01	0.4110	0.000E+00	0.0000	3.824E-04	0.0004
Po-210	8.913E-15	0.0000	1.207E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.270E-09	0.0000	0.000E+00	0.0000	1.495E-12	0.0000
Ra-226	3.654E-01	0.3751	7.688E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.948E-01	0.1999	0.000E+00	0.0000	2.185E-04	0.0002
Th-230	1.727E-03	0.0018	6.545E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.385E-03	0.0024	0.000E+00	0.0000	6.087E-05	0.0001
U-234	1.275E-05	0.0000	5.854E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.444E-03	0.0015	0.000E+00	0.0000	1.344E-05	0.0000
U-238	5.660E-03	0.0058	4.996E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.400E-03	0.0014	0.000E+00	0.0000	1.303E-05	0.0000
Total	3.730E-01	0.3829	8.857E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	6.004E-01	0.6163	0.000E+00	0.0000	6.883E-04	0.0007

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.010E-01	0.4116
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-09	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.604E-01	0.5752
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.239E-03	0.0044
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-03	0.0015
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.078E-03	0.0073
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.743E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator_Soil + Game and Fowl

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.026E-04	0.0001	2.376E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.074E-01	0.2223	0.000E+00	0.0000	1.981E-04	0.0002
Po-210	0.000E+00	0.0000	1.118E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.102E-25	0.0000	0.000E+00	0.0000	1.384E-28	0.0000
Ra-226	3.456E-01	0.3703	9.304E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.618E-01	0.3876	0.000E+00	0.0000	3.762E-04	0.0004
Th-230	4.806E-03	0.0051	6.551E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.889E-03	0.0052	0.000E+00	0.0000	6.352E-05	0.0001
U-234	1.252E-05	0.0000	5.489E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.352E-03	0.0014	0.000E+00	0.0000	1.258E-05	0.0000
U-238	5.296E-03	0.0057	4.675E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.310E-03	0.0014	0.000E+00	0.0000	1.219E-05	0.0000
Total	3.558E-01	0.3812	8.735E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	5.768E-01	0.6180	0.000E+00	0.0000	6.626E-04	0.0007

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.077E-01	0.2226
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.104E-25	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.077E-01	0.7583
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.824E-03	0.0105
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E-03	0.0015
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.624E-03	0.0071
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.333E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator_Soil + Game and Fowl

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.027E-05	0.0000	2.378E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.076E-02	0.0260	0.000E+00	0.0000	1.982E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.840E-01	0.3564	9.424E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.526E-01	0.5680	0.000E+00	0.0000	4.575E-04	0.0006
Th-230	1.431E-02	0.0180	6.575E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.822E-02	0.0229	0.000E+00	0.0000	7.704E-05	0.0001
U-234	1.561E-05	0.0000	4.388E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.078E-03	0.0014	0.000E+00	0.0000	1.001E-05	0.0000
U-238	4.198E-03	0.0053	3.707E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.039E-03	0.0013	0.000E+00	0.0000	9.667E-06	0.0000
Total	3.025E-01	0.3796	8.350E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.937E-01	0.6195	0.000E+00	0.0000	5.740E-04	0.0007

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.079E-02	0.0261
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.371E-01	0.9249
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.267E-02	0.0410
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-03	0.0014
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.251E-03	0.0066
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.969E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator_Soil + Game and Fowl

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.429E-08	0.0000	3.309E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.889E-05	0.0001	0.000E+00	0.0000	2.758E-08	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.620E-01	0.3124	5.516E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.704E-01	0.5214	0.000E+00	0.0000	2.727E-04	0.0005
Th-230	3.309E-02	0.0638	6.623E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.929E-02	0.0950	0.000E+00	0.0000	1.082E-04	0.0002
U-234	4.243E-05	0.0001	2.347E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.041E-04	0.0012	0.000E+00	0.0000	5.282E-06	0.0000
U-238	2.162E-03	0.0042	1.910E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.353E-04	0.0010	0.000E+00	0.0000	4.980E-06	0.0000
Total	1.973E-01	0.3804	7.600E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-01	0.6187	0.000E+00	0.0000	3.912E-04	0.0008

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.893E-05	0.0001
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.688E-25	0.0000	0.000E+00	0.0000	4.327E-01	0.8343
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.084E-28	0.0000	0.000E+00	0.0000	8.255E-02	0.1592
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.691E-17	0.0000	0.000E+00	0.0000	6.542E-04	0.0013
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.728E-22	0.0000	0.000E+00	0.0000	2.704E-03	0.0052
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.691E-17	0.0000	0.000E+00	0.0000	5.187E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator_Soil + Game and Fowl

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.437E-18	0.0000	3.328E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.905E-15	0.0000	0.000E+00	0.0000	2.774E-18	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.271E-02	0.0976	7.733E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.791E-02	0.1630	0.000E+00	0.0000	3.823E-05	0.0002
Th-230	5.419E-02	0.2329	6.640E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	8.457E-02	0.3635	0.000E+00	0.0000	1.433E-04	0.0006
U-234	1.296E-04	0.0006	3.953E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.538E-04	0.0011	0.000E+00	0.0000	8.580E-07	0.0000
U-238	2.118E-04	0.0009	1.876E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.266E-05	0.0002	0.000E+00	0.0000	4.890E-07	0.0000
Total	7.724E-02	0.3320	6.776E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.228E-01	0.5278	0.000E+00	0.0000	1.829E-04	0.0008

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.354E-16	0.0000	0.000E+00	0.0000	3.545E-15	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.871E-02	0.1234	0.000E+00	0.0000	8.937E-02	0.3842
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.525E-03	0.0152	0.000E+00	0.0000	1.425E-01	0.6125
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.305E-05	0.0004	0.000E+00	0.0000	4.677E-04	0.0020
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.524E-05	0.0002	0.000E+00	0.0000	3.004E-04	0.0013
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.235E-02	0.1391	0.000E+00	0.0000	2.326E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator_Soil + Game and Fowl

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210+D	Pb-210+D	1.000E+00	5.912E-02	5.721E-02	5.357E-02	4.255E-02	2.204E-02	2.206E-03	3.070E-06	3.154E-16
Pb-210+D	Po-210	1.000E+00	2.622E-01	4.443E-01	4.503E-01	3.585E-01	1.857E-01	1.858E-02	2.586E-05	3.229E-15
Pb-210+D	ΣDSR(j)		3.213E-01	5.016E-01	5.039E-01	4.010E-01	2.077E-01	2.079E-02	2.893E-05	3.545E-15
Pb-210+D1	Pb-210+D1	1.320E-06	7.864E-08	7.610E-08	7.125E-08	5.660E-08	2.932E-08	2.934E-09	4.083E-12	4.195E-22
Pb-210+D2	Pb-210+D2	1.900E-08	1.543E-09	1.493E-09	1.398E-09	1.110E-09	5.752E-10	5.756E-11	8.011E-14	8.183E-24
Po-210	Po-210	1.000E+00	2.360E-01	3.727E-02	9.291E-04	2.272E-09	2.104E-25	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	9.996E-01	4.255E-01	4.243E-01	4.220E-01	4.138E-01	3.912E-01	3.214E-01	1.833E-01	2.592E-02
Ra-226+D	Pb-210+D	9.996E-01	1.151E-03	2.999E-03	6.429E-03	1.665E-02	3.461E-02	4.494E-02	2.694E-02	4.083E-03
Ra-226+D	Po-210	9.996E-01	3.138E-03	1.503E-02	4.336E-02	1.297E-01	2.816E-01	3.704E-01	2.222E-01	5.933E-02
Ra-226+D	ΣDSR(j)		4.298E-01	4.424E-01	4.718E-01	5.601E-01	7.073E-01	7.367E-01	4.325E-01	8.932E-02
Ra-226+D	Ra-226+D	1.319E-06	5.617E-07	5.601E-07	5.570E-07	5.462E-07	5.163E-07	4.242E-07	2.420E-07	3.421E-08
Ra-226+D	Pb-210+D1	1.319E-06	1.529E-09	3.986E-09	8.548E-09	2.215E-08	4.604E-08	5.978E-08	3.583E-08	5.427E-09
Ra-226+D	ΣDSR(j)		5.632E-07	5.641E-07	5.655E-07	5.683E-07	5.624E-07	4.840E-07	2.778E-07	3.964E-08
Ra-226+D	Ra-226+D	1.899E-08	8.085E-09	8.062E-09	8.017E-09	7.861E-09	7.432E-09	6.106E-09	3.483E-09	4.924E-10
Ra-226+D	Pb-210+D2	1.899E-08	2.844E-11	7.638E-11	1.659E-10	4.327E-10	9.015E-10	1.171E-09	7.021E-10	1.042E-10
Ra-226+D	ΣDSR(j)		8.113E-09	8.139E-09	8.183E-09	8.294E-09	8.334E-09	7.278E-09	4.185E-09	5.967E-10
Ra-226+D1	Ra-226+D1	2.100E-04	2.159E-04	2.153E-04	2.141E-04	2.099E-04	1.985E-04	1.631E-04	9.301E-05	1.308E-05
Ra-226+D1	Pb-210+D	2.100E-04	2.418E-07	6.299E-07	1.350E-06	3.498E-06	7.270E-06	9.440E-06	5.658E-06	8.576E-07
Ra-226+D1	Po-210	2.100E-04	6.591E-07	3.157E-06	9.108E-06	2.724E-05	5.914E-05	7.779E-05	4.668E-05	1.246E-05
Ra-226+D1	ΣDSR(j)		2.168E-04	2.191E-04	2.245E-04	2.406E-04	2.649E-04	2.503E-04	1.453E-04	2.640E-05
Ra-226+D1	Ra-226+D1	2.771E-10	2.850E-10	2.842E-10	2.826E-10	2.771E-10	2.620E-10	2.152E-10	1.228E-10	1.727E-11
Ra-226+D1	Pb-210+D1	2.771E-10	3.211E-13	8.372E-13	1.795E-12	4.652E-12	9.670E-12	1.256E-11	7.526E-12	1.140E-12
Ra-226+D1	ΣDSR(j)		2.853E-10	2.850E-10	2.844E-10	2.817E-10	2.716E-10	2.278E-10	1.303E-10	1.841E-11
Ra-226+D1	Ra-226+D1	3.989E-12	4.102E-12	4.090E-12	4.067E-12	3.988E-12	3.771E-12	3.098E-12	1.767E-12	2.486E-13
Ra-226+D1	Pb-210+D2	3.989E-12	5.973E-15	1.604E-14	3.484E-14	9.088E-14	1.894E-13	2.460E-13	1.475E-13	2.190E-14
Ra-226+D1	ΣDSR(j)		4.108E-12	4.106E-12	4.102E-12	4.079E-12	3.960E-12	3.344E-12	1.915E-12	2.705E-13
Ra-226+D2	Ra-226+D2	1.998E-04	7.591E-05	7.570E-05	7.527E-05	7.381E-05	6.978E-05	5.733E-05	3.270E-05	4.628E-06
Ra-226+D2	Pb-210+D	1.998E-04	2.300E-07	5.993E-07	1.285E-06	3.328E-06	6.917E-06	8.982E-06	5.384E-06	8.159E-07
Ra-226+D2	Po-210	1.998E-04	6.270E-07	3.004E-06	8.665E-06	2.591E-05	5.627E-05	7.401E-05	4.441E-05	1.186E-05
Ra-226+D2	ΣDSR(j)		7.677E-05	7.930E-05	8.522E-05	1.031E-04	1.330E-04	1.403E-04	8.250E-05	1.730E-05
Ra-226+D2	Ra-226+D2	2.637E-10	1.002E-10	9.992E-11	9.936E-11	9.743E-11	9.211E-11	7.568E-11	4.317E-11	6.109E-12
Ra-226+D2	Pb-210+D1	2.637E-10	3.055E-13	7.966E-13	1.708E-12	4.426E-12	9.200E-12	1.195E-11	7.160E-12	1.085E-12
Ra-226+D2	ΣDSR(j)		1.005E-10	1.007E-10	1.011E-10	1.019E-10	1.013E-10	8.762E-11	5.033E-11	7.193E-12

Summary : Recreator_Soil + Game and Fowl

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D2	Ra-226+D2	3.795E-12	1.442E-12	1.438E-12	1.430E-12	1.402E-12	1.326E-12	1.089E-12	6.214E-13	8.793E-14
Ra-226+D2	Pb-210+D2	3.795E-12	5.683E-15	1.526E-14	3.315E-14	8.647E-14	1.802E-13	2.341E-13	1.403E-13	2.083E-14
Ra-226+D2	ΣDSR(j)		1.448E-12	1.454E-12	1.463E-12	1.489E-12	1.506E-12	1.323E-12	7.617E-13	1.088E-13
Ra-226+D3	Ra-226+D3	4.196E-08	4.123E-08	4.111E-08	4.088E-08	4.008E-08	3.790E-08	3.114E-08	1.776E-08	2.499E-09
Ra-226+D3	Pb-210+D	4.196E-08	4.832E-11	1.259E-10	2.698E-10	6.990E-10	1.453E-09	1.887E-09	1.131E-09	1.714E-10
Ra-226+D3	Po-210	4.196E-08	1.317E-10	6.309E-10	1.820E-09	5.443E-09	1.182E-08	1.555E-08	9.328E-09	2.490E-09
Ra-226+D3	ΣDSR(j)		4.141E-08	4.187E-08	4.297E-08	4.623E-08	5.117E-08	4.857E-08	2.822E-08	5.160E-09
Ra-226+D3	Ra-226+D3	5.538E-14	5.442E-14	5.427E-14	5.396E-14	5.291E-14	5.002E-14	4.110E-14	2.344E-14	3.298E-15
Ra-226+D3	Pb-210+D1	5.538E-14	6.417E-17	1.673E-16	3.588E-16	9.296E-16	1.932E-15	2.509E-15	1.504E-15	2.278E-16
Ra-226+D3	ΣDSR(j)		5.448E-14	5.443E-14	5.432E-14	5.384E-14	5.196E-14	4.361E-14	2.495E-14	3.526E-15
Ra-226+D3	Ra-226+D3	7.972E-16	7.833E-16	7.811E-16	7.767E-16	7.616E-16	7.200E-16	5.916E-16	3.375E-16	4.748E-17
Ra-226+D3	Pb-210+D2	7.972E-16	1.194E-18	3.206E-18	6.963E-18	1.816E-17	3.784E-17	4.917E-17	2.947E-17	4.376E-18
Ra-226+D3	ΣDSR(j)		7.845E-16	7.843E-16	7.837E-16	7.798E-16	7.579E-16	6.408E-16	3.669E-16	5.185E-17
Ra-226+D4	Ra-226+D4	2.000E-07	1.029E-08	1.026E-08	1.020E-08	1.000E-08	9.455E-09	7.768E-09	4.431E-09	6.649E-10
Ra-226+D4	Pb-210+D	2.000E-07	2.303E-10	6.000E-10	1.286E-09	3.332E-09	6.926E-09	8.992E-09	5.390E-09	8.169E-10
Ra-226+D4	Po-210	2.000E-07	6.278E-10	3.007E-09	8.676E-09	2.595E-08	5.634E-08	7.410E-08	4.447E-08	1.187E-08
Ra-226+D4	ΣDSR(j)		1.114E-08	1.386E-08	2.016E-08	3.928E-08	7.272E-08	9.087E-08	5.429E-08	1.335E-08
Ra-226+D4	Ra-226+D4	2.640E-13	1.358E-14	1.354E-14	1.346E-14	1.320E-14	1.248E-14	1.025E-14	5.849E-15	8.777E-16
Ra-226+D4	Pb-210+D1	2.640E-13	3.059E-16	7.975E-16	1.710E-15	4.431E-15	9.211E-15	1.196E-14	7.169E-15	1.086E-15
Ra-226+D4	ΣDSR(j)		1.388E-14	1.434E-14	1.517E-14	1.763E-14	2.169E-14	2.221E-14	1.302E-14	1.964E-15
Ra-226+D4	Ra-226+D4	3.800E-15	1.954E-16	1.949E-16	1.938E-16	1.900E-16	1.796E-16	1.476E-16	8.419E-17	1.263E-17
Ra-226+D4	Pb-210+D2	3.800E-15	5.690E-18	1.528E-17	3.319E-17	8.657E-17	1.804E-16	2.344E-16	1.405E-16	2.086E-17
Ra-226+D4	ΣDSR(j)		2.011E-16	2.102E-16	2.270E-16	2.766E-16	3.600E-16	3.820E-16	2.247E-16	3.349E-17
Th-230	Th-230	9.996E-01	1.992E-03	1.992E-03	1.992E-03	1.991E-03	1.991E-03	1.989E-03	1.984E-03	1.968E-03
Th-230	Ra-226+D	9.996E-01	9.006E-05	2.738E-04	6.404E-04	1.907E-03	5.393E-03	1.615E-02	3.739E-02	6.130E-02
Th-230	Pb-210+D	9.996E-01	1.707E-07	1.078E-06	5.180E-06	4.083E-05	2.728E-04	1.584E-03	4.677E-03	8.231E-03
Th-230	Po-210	9.996E-01	3.640E-07	4.106E-06	2.941E-05	2.973E-04	2.162E-03	1.293E-02	3.844E-02	7.092E-02
Th-230	ΣDSR(j)		2.082E-03	2.271E-03	2.667E-03	4.237E-03	9.818E-03	3.265E-02	8.250E-02	1.424E-01
Th-230	Th-230	1.319E-06	2.629E-09	2.629E-09	2.629E-09	2.629E-09	2.628E-09	2.626E-09	2.620E-09	2.598E-09
Th-230	Ra-226+D	1.319E-06	1.189E-10	3.614E-10	8.453E-10	2.518E-09	7.118E-09	2.132E-08	4.936E-08	8.092E-08
Th-230	Pb-210+D1	1.319E-06	1.404E-13	1.112E-12	6.093E-12	5.187E-11	3.559E-10	2.085E-09	6.173E-09	1.087E-08
Th-230	ΣDSR(j)		2.748E-09	2.991E-09	3.480E-09	5.198E-09	1.010E-08	2.603E-08	5.815E-08	9.439E-08
Th-230	Th-230	1.899E-08	3.784E-11	3.784E-11	3.784E-11	3.784E-11	3.783E-11	3.780E-11	3.771E-11	3.739E-11
Th-230	Ra-226+D	1.899E-08	1.711E-12	5.202E-12	1.217E-11	3.624E-11	1.025E-10	3.069E-10	7.105E-10	1.165E-09
Th-230	Pb-210+D2	1.899E-08	2.955E-15	2.247E-14	1.211E-13	1.022E-12	6.995E-12	4.095E-11	1.212E-10	2.131E-10
Th-230	ΣDSR(j)		3.956E-11	4.307E-11	5.013E-11	7.510E-11	1.473E-10	3.857E-10	8.694E-10	1.415E-09

Summary : Recreator_Soil + Game and Fowl

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.100E-04	4.183E-07	4.183E-07	4.183E-07	4.183E-07	4.182E-07	4.178E-07	4.168E-07	4.134E-07
Th-230	Ra-226+D1	2.100E-04	4.633E-08	1.396E-07	3.256E-07	9.684E-07	2.737E-06	8.196E-06	1.897E-05	3.109E-05
Th-230	Pb-210+D	2.100E-04	3.585E-11	2.265E-10	1.088E-09	8.577E-09	5.730E-08	3.326E-07	9.824E-07	1.729E-06
Th-230	Po-210	2.100E-04	7.646E-11	8.625E-10	6.178E-09	6.245E-08	4.541E-07	2.716E-06	8.075E-06	1.490E-05
Th-230	ΣDSR(j)		4.648E-07	5.591E-07	7.512E-07	1.458E-06	3.666E-06	1.166E-05	2.845E-05	4.813E-05
Th-230	Th-230	2.771E-10	5.522E-13	5.522E-13	5.522E-13	5.521E-13	5.520E-13	5.515E-13	5.502E-13	5.456E-13
Th-230	Ra-226+D1	2.771E-10	6.116E-14	1.843E-13	4.299E-13	1.278E-12	3.612E-12	1.082E-11	2.504E-11	4.104E-11
Th-230	Pb-210+D1	2.771E-10	2.949E-17	2.335E-16	1.280E-15	1.090E-14	7.475E-14	4.380E-13	1.297E-12	2.283E-12
Th-230	ΣDSR(j)		6.134E-13	7.368E-13	9.833E-13	1.841E-12	4.239E-12	1.181E-11	2.689E-11	4.387E-11
Th-230	Th-230	3.989E-12	7.948E-15	7.948E-15	7.948E-15	7.947E-15	7.945E-15	7.939E-15	7.920E-15	7.854E-15
Th-230	Ra-226+D1	3.989E-12	8.803E-16	2.653E-15	6.187E-15	1.840E-14	5.200E-14	1.557E-13	3.605E-13	5.908E-13
Th-230	Pb-210+D2	3.989E-12	6.206E-19	4.720E-18	2.544E-17	2.148E-16	1.469E-15	8.602E-15	2.546E-14	4.476E-14
Th-230	ΣDSR(j)		8.829E-15	1.061E-14	1.416E-14	2.656E-14	6.141E-14	1.723E-13	3.939E-13	6.434E-13
Th-230	Th-230	1.998E-04	3.980E-07	3.980E-07	3.980E-07	3.980E-07	3.979E-07	3.975E-07	3.966E-07	3.933E-07
Th-230	Ra-226+D2	1.998E-04	1.602E-08	4.879E-08	1.142E-07	3.402E-07	9.619E-07	2.881E-06	6.671E-06	1.094E-05
Th-230	Pb-210+D	1.998E-04	3.411E-11	2.154E-10	1.035E-09	8.160E-09	5.451E-08	3.165E-07	9.347E-07	1.645E-06
Th-230	Po-210	1.998E-04	7.275E-11	8.206E-10	5.878E-09	5.941E-08	4.321E-07	2.584E-06	7.683E-06	1.417E-05
Th-230	ΣDSR(j)		4.141E-07	4.478E-07	5.191E-07	8.057E-07	1.846E-06	6.179E-06	1.568E-05	2.715E-05
Th-230	Th-230	2.637E-10	5.254E-13	5.254E-13	5.254E-13	5.253E-13	5.252E-13	5.247E-13	5.235E-13	5.191E-13
Th-230	Ra-226+D2	2.637E-10	2.115E-14	6.440E-14	1.507E-13	4.491E-13	1.270E-12	3.804E-12	8.805E-12	1.444E-11
Th-230	Pb-210+D1	2.637E-10	2.806E-17	2.222E-16	1.218E-15	1.037E-14	7.112E-14	4.168E-13	1.234E-12	2.172E-12
Th-230	ΣDSR(j)		5.465E-13	5.900E-13	6.773E-13	9.848E-13	1.866E-12	4.745E-12	1.056E-11	1.713E-11
Th-230	Th-230	3.795E-12	7.562E-15	7.562E-15	7.562E-15	7.561E-15	7.559E-15	7.553E-15	7.535E-15	7.472E-15
Th-230	Ra-226+D2	3.795E-12	3.044E-16	9.269E-16	2.170E-15	6.464E-15	1.828E-14	5.475E-14	1.267E-13	2.078E-13
Th-230	Pb-210+D2	3.795E-12	5.905E-19	4.491E-18	2.420E-17	2.043E-16	1.398E-15	8.184E-15	2.422E-14	4.259E-14
Th-230	ΣDSR(j)		7.867E-15	8.494E-15	9.756E-15	1.423E-14	2.723E-14	7.049E-14	1.585E-13	2.578E-13
Th-230	Th-230	4.196E-08	8.360E-11	8.360E-11	8.360E-11	8.359E-11	8.357E-11	8.350E-11	8.330E-11	8.260E-11
Th-230	Ra-226+D3	4.196E-08	8.844E-12	2.666E-11	6.218E-11	1.849E-10	5.226E-10	1.565E-09	3.623E-09	5.938E-09
Th-230	Pb-210+D	4.196E-08	7.164E-15	4.525E-14	2.174E-13	1.714E-12	1.145E-11	6.647E-11	1.963E-10	3.455E-10
Th-230	Po-210	4.196E-08	1.528E-14	1.724E-13	1.235E-12	1.248E-11	9.075E-11	5.427E-10	1.614E-09	2.977E-09
Th-230	ΣDSR(j)		9.247E-11	1.105E-10	1.472E-10	2.827E-10	7.083E-10	2.258E-09	5.516E-09	9.343E-09
Th-230	Th-230	5.538E-14	1.104E-16	1.104E-16	1.103E-16	1.103E-16	1.103E-16	1.102E-16	1.100E-16	1.090E-16
Th-230	Ra-226+D3	5.538E-14	1.167E-17	3.519E-17	8.208E-17	2.441E-16	6.898E-16	2.066E-15	4.782E-15	7.838E-15
Th-230	Pb-210+D1	5.538E-14	5.894E-21	4.667E-20	2.558E-19	2.177E-18	1.494E-17	8.754E-17	2.591E-16	4.562E-16
Th-230	ΣDSR(j)		1.220E-16	1.456E-16	1.927E-16	3.566E-16	8.151E-16	2.264E-15	5.151E-15	8.403E-15
Th-230	Th-230	7.972E-16	1.588E-18	1.588E-18	1.588E-18	1.588E-18	1.588E-18	1.586E-18	1.583E-18	1.569E-18
Th-230	Ra-226+D3	7.972E-16	1.680E-19	5.066E-19	1.181E-18	3.514E-18	9.929E-18	2.974E-17	6.884E-17	1.128E-16
Th-230	Pb-210+D2	7.972E-16	1.240E-22	9.433E-22	5.084E-21	4.292E-20	2.936E-19	1.719E-18	5.087E-18	8.945E-18
Th-230	ΣDSR(j)		1.757E-18	2.096E-18	2.775E-18	5.145E-18	1.181E-17	3.304E-17	7.551E-17	1.233E-16

Summary : Recreator_Soil + Game and Fowl

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.000E-07	3.985E-10	3.985E-10	3.985E-10	3.984E-10	3.983E-10	3.980E-10	3.971E-10	3.937E-10
Th-230	Ra-226+D4	2.000E-07	1.799E-12	6.175E-12	1.504E-11	4.566E-11	1.299E-10	3.900E-10	9.034E-10	1.486E-09
Th-230	Pb-210+D	2.000E-07	3.415E-14	2.157E-13	1.036E-12	8.170E-12	5.458E-11	3.168E-10	9.358E-10	1.647E-09
Th-230	Po-210	2.000E-07	7.284E-14	8.216E-13	5.885E-12	5.948E-11	4.326E-10	2.587E-09	7.692E-09	1.419E-08
Th-230	ΣDSR(j)		4.004E-10	4.057E-10	4.204E-10	5.118E-10	1.015E-09	3.692E-09	9.928E-09	1.772E-08
Th-230	Th-230	2.640E-13	5.260E-16	5.260E-16	5.260E-16	5.259E-16	5.258E-16	5.254E-16	5.241E-16	5.197E-16
Th-230	Ra-226+D4	2.640E-13	2.374E-18	8.151E-18	1.985E-17	6.027E-17	1.715E-16	5.148E-16	1.193E-15	1.962E-15
Th-230	Pb-210+D1	2.640E-13	2.809E-20	2.225E-19	1.219E-18	1.038E-17	7.121E-17	4.173E-16	1.235E-15	2.174E-15
Th-230	ΣDSR(j)		5.284E-16	5.344E-16	5.471E-16	5.966E-16	7.685E-16	1.457E-15	2.952E-15	4.656E-15
Th-230	Th-230	3.800E-15	7.571E-18	7.571E-18	7.571E-18	7.570E-18	7.569E-18	7.562E-18	7.544E-18	7.481E-18
Th-230	Ra-226+D4	3.800E-15	3.418E-20	1.173E-19	2.857E-19	8.676E-19	2.468E-18	7.410E-18	1.717E-17	2.824E-17
Th-230	Pb-210+D2	3.800E-15	5.912E-22	4.496E-21	2.423E-20	2.046E-19	1.400E-18	8.194E-18	2.425E-17	4.264E-17
Th-230	ΣDSR(j)		7.606E-18	7.693E-18	7.881E-18	8.643E-18	1.144E-17	2.317E-17	4.896E-17	7.836E-17
U-234	U-234	9.996E-01	1.525E-03	1.520E-03	1.510E-03	1.475E-03	1.380E-03	1.094E-03	5.628E-04	9.106E-05
U-234	Th-230	9.996E-01	1.121E-08	2.981E-08	6.612E-08	1.913E-07	5.333E-07	1.566E-06	3.475E-06	5.268E-06
U-234	Ra-226+D	9.996E-01	2.727E-10	1.941E-09	1.031E-08	9.142E-08	7.413E-07	6.996E-06	4.246E-05	1.464E-04
U-234	Pb-210+D	9.996E-01	3.973E-13	5.522E-12	5.834E-11	1.361E-09	2.712E-08	5.568E-07	4.902E-06	1.980E-05
U-234	Po-210	9.996E-01	6.989E-13	1.722E-11	2.870E-10	9.321E-09	2.100E-07	4.513E-06	4.021E-05	2.049E-04
U-234	ΣDSR(j)		1.525E-03	1.520E-03	1.510E-03	1.475E-03	1.382E-03	1.107E-03	6.539E-04	4.675E-04
U-234	U-234	1.319E-06	2.013E-09	2.006E-09	1.993E-09	1.947E-09	1.822E-09	1.444E-09	7.429E-10	1.202E-10
U-234	Th-230	1.319E-06	1.480E-14	3.935E-14	8.728E-14	2.525E-13	7.040E-13	2.067E-12	4.587E-12	6.954E-12
U-234	Ra-226+D	1.319E-06	3.600E-16	2.562E-15	1.361E-14	1.207E-13	9.786E-13	9.234E-12	5.605E-11	1.933E-10
U-234	Pb-210+D1	1.319E-06	2.985E-19	5.246E-18	6.525E-17	1.695E-15	3.512E-14	7.315E-13	6.465E-12	2.614E-11
U-234	ΣDSR(j)		2.013E-09	2.006E-09	1.993E-09	1.947E-09	1.823E-09	1.456E-09	8.100E-10	3.466E-10
U-234	U-234	1.899E-08	2.897E-11	2.887E-11	2.868E-11	2.802E-11	2.622E-11	2.078E-11	1.069E-11	1.730E-12
U-234	Th-230	1.899E-08	2.130E-16	5.664E-16	1.256E-15	3.635E-15	1.013E-14	2.975E-14	6.602E-14	1.001E-13
U-234	Ra-226+D	1.899E-08	5.182E-18	3.688E-17	1.960E-16	1.737E-15	1.409E-14	1.329E-13	8.068E-13	2.782E-12
U-234	Pb-210+D2	1.899E-08	6.446E-21	1.075E-19	1.305E-18	3.348E-17	6.908E-16	1.437E-14	1.269E-13	5.098E-13
U-234	ΣDSR(j)		2.897E-11	2.887E-11	2.868E-11	2.803E-11	2.625E-11	2.096E-11	1.169E-11	5.122E-12
U-234	U-234	2.100E-04	3.203E-07	3.192E-07	3.171E-07	3.098E-07	2.899E-07	2.297E-07	1.182E-07	1.913E-08
U-234	Th-230	2.100E-04	2.355E-12	6.262E-12	1.389E-11	4.018E-11	1.120E-10	3.288E-10	7.299E-10	1.107E-09
U-234	Ra-226+D1	2.100E-04	1.412E-13	9.943E-13	5.255E-12	4.645E-11	3.763E-10	3.550E-09	2.154E-08	7.418E-08
U-234	Pb-210+D	2.100E-04	8.335E-17	1.160E-15	1.225E-14	2.859E-13	5.696E-12	1.169E-10	1.030E-09	4.159E-09
U-234	Po-210	2.100E-04	1.468E-16	3.618E-15	6.027E-14	1.958E-12	4.411E-11	9.479E-10	8.446E-09	4.305E-08
U-234	ΣDSR(j)		3.203E-07	3.192E-07	3.171E-07	3.099E-07	2.904E-07	2.347E-07	1.500E-07	1.416E-07
U-234	U-234	2.771E-10	4.227E-13	4.213E-13	4.186E-13	4.089E-13	3.826E-13	3.033E-13	1.561E-13	2.525E-14
U-234	Th-230	2.771E-10	3.109E-18	8.265E-18	1.833E-17	5.304E-17	1.479E-16	4.341E-16	9.635E-16	1.461E-15
U-234	Ra-226+D1	2.771E-10	1.864E-19	1.312E-18	6.937E-18	6.131E-17	4.967E-16	4.686E-15	2.844E-14	9.792E-14
U-234	Pb-210+D1	2.771E-10	6.269E-23	1.102E-21	1.371E-20	3.560E-19	7.377E-18	1.537E-16	1.358E-15	5.491E-15
U-234	ΣDSR(j)		4.227E-13	4.214E-13	4.186E-13	4.090E-13	3.833E-13	3.085E-13	1.868E-13	1.301E-13

Summary : Recreator_Soil + Game and Fowl

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	3.989E-12	6.085E-15	6.065E-15	6.025E-15	5.886E-15	5.508E-15	4.365E-15	2.246E-15	3.634E-16
U-234	Th-230	3.989E-12	4.475E-20	1.190E-19	2.639E-19	7.635E-19	2.128E-18	6.248E-18	1.387E-17	2.102E-17
U-234	Ra-226+D1	3.989E-12	2.683E-21	1.889E-20	9.985E-20	8.825E-19	7.150E-18	6.744E-17	4.093E-16	1.409E-15
U-234	Pb-210+D2	3.989E-12	1.354E-24	2.257E-23	2.741E-22	7.032E-21	1.451E-19	3.018E-18	2.666E-17	1.071E-16
U-234	ΣDSR(j)		6.085E-15	6.065E-15	6.025E-15	5.888E-15	5.517E-15	4.442E-15	2.696E-15	1.901E-15
U-234	U-234	1.998E-04	3.047E-07	3.037E-07	3.017E-07	2.947E-07	2.758E-07	2.186E-07	1.125E-07	1.820E-08
U-234	Th-230	1.998E-04	2.241E-12	5.957E-12	1.321E-11	3.823E-11	1.066E-10	3.129E-10	6.944E-10	1.053E-09
U-234	Ra-226+D2	1.998E-04	4.838E-14	3.453E-13	1.838E-12	1.630E-11	1.322E-10	1.248E-09	7.575E-09	2.613E-08
U-234	Pb-210+D	1.998E-04	7.930E-17	1.103E-15	1.166E-14	2.720E-13	5.419E-12	1.113E-10	9.796E-10	3.957E-09
U-234	Po-210	1.998E-04	1.397E-16	3.442E-15	5.734E-14	1.863E-12	4.197E-11	9.018E-10	8.035E-09	4.096E-08
U-234	ΣDSR(j)		3.047E-07	3.037E-07	3.017E-07	2.948E-07	2.761E-07	2.212E-07	1.298E-07	9.029E-08
U-234	U-234	2.637E-10	4.022E-13	4.009E-13	3.982E-13	3.891E-13	3.641E-13	2.885E-13	1.485E-13	2.402E-14
U-234	Th-230	2.637E-10	2.958E-18	7.864E-18	1.744E-17	5.046E-17	1.407E-16	4.130E-16	9.167E-16	1.390E-15
U-234	Ra-226+D2	2.637E-10	6.386E-20	4.558E-19	2.426E-18	2.152E-17	1.745E-16	1.647E-15	9.999E-15	3.449E-14
U-234	Pb-210+D1	2.637E-10	5.965E-23	1.048E-21	1.304E-20	3.387E-19	7.018E-18	1.462E-16	1.292E-15	5.224E-15
U-234	ΣDSR(j)		4.022E-13	4.009E-13	3.982E-13	3.891E-13	3.644E-13	2.907E-13	1.607E-13	6.513E-14
U-234	U-234	3.795E-12	5.789E-15	5.770E-15	5.732E-15	5.600E-15	5.240E-15	4.153E-15	2.137E-15	3.458E-16
U-234	Th-230	3.795E-12	4.257E-20	1.132E-19	2.511E-19	7.264E-19	2.025E-18	5.944E-18	1.319E-17	2.000E-17
U-234	Ra-226+D2	3.795E-12	9.191E-22	6.561E-21	3.491E-20	3.097E-19	2.512E-18	2.371E-17	1.439E-16	4.965E-16
U-234	Pb-210+D2	3.795E-12	1.288E-24	2.148E-23	2.608E-22	6.690E-21	1.381E-19	2.871E-18	2.537E-17	1.019E-16
U-234	ΣDSR(j)		5.789E-15	5.770E-15	5.732E-15	5.601E-15	5.245E-15	4.185E-15	2.320E-15	9.641E-16
U-234	U-234	4.196E-08	6.400E-11	6.379E-11	6.337E-11	6.191E-11	5.793E-11	4.591E-11	2.363E-11	3.822E-12
U-234	Th-230	4.196E-08	4.707E-16	1.251E-15	2.775E-15	8.030E-15	2.239E-14	6.572E-14	1.459E-13	2.211E-13
U-234	Ra-226+D3	4.196E-08	2.694E-17	1.898E-16	1.003E-15	8.869E-15	7.186E-14	6.778E-13	4.114E-12	1.417E-11
U-234	Pb-210+D	4.196E-08	1.666E-20	2.317E-19	2.449E-18	5.713E-17	1.138E-15	2.337E-14	2.058E-13	8.312E-13
U-234	Po-210	4.196E-08	2.934E-20	7.230E-19	1.204E-17	3.912E-16	8.816E-15	1.894E-13	1.688E-12	8.603E-12
U-234	ΣDSR(j)		6.400E-11	6.379E-11	6.337E-11	6.193E-11	5.803E-11	4.687E-11	2.978E-11	2.764E-11
U-234	U-234	5.538E-14	8.448E-17	8.420E-17	8.364E-17	8.172E-17	7.647E-17	6.060E-17	3.119E-17	5.045E-18
U-234	Th-230	5.538E-14	6.213E-22	1.652E-21	3.663E-21	1.060E-20	2.955E-20	8.674E-20	1.925E-19	2.919E-19
U-234	Ra-226+D3	5.538E-14	3.557E-23	2.505E-22	1.324E-21	1.171E-20	9.485E-20	8.948E-19	5.431E-18	1.870E-17
U-234	Pb-210+D1	5.538E-14	1.253E-26	2.202E-25	2.739E-24	7.115E-23	1.474E-21	3.071E-20	2.714E-19	1.097E-18
U-234	ΣDSR(j)		8.448E-17	8.420E-17	8.365E-17	8.174E-17	7.659E-17	6.161E-17	3.708E-17	2.513E-17
U-234	U-234	7.972E-16	1.216E-18	1.212E-18	1.204E-18	1.176E-18	1.101E-18	8.723E-19	4.489E-19	7.262E-20
U-234	Th-230	7.972E-16	8.942E-24	2.378E-23	5.273E-23	1.526E-22	4.253E-22	1.249E-21	2.771E-21	4.201E-21
U-234	Ra-226+D3	7.972E-16	5.119E-25	3.606E-24	1.906E-23	1.685E-22	1.365E-21	1.288E-20	7.817E-20	2.691E-19
U-234	Pb-210+D2	7.972E-16	2.706E-28	4.511E-27	5.478E-26	1.405E-24	2.900E-23	6.031E-22	5.328E-21	2.140E-20
U-234	ΣDSR(j)		1.216E-18	1.212E-18	1.204E-18	1.177E-18	1.102E-18	8.870E-19	5.351E-19	3.674E-19

Summary : Recreator_Soil + Game and Fowl

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.000E-07	3.051E-10	3.041E-10	3.020E-10	2.951E-10	2.761E-10	2.188E-10	1.126E-10	1.822E-11
U-234	Th-230	2.000E-07	2.243E-15	5.965E-15	1.323E-14	3.828E-14	1.067E-13	3.132E-13	6.953E-13	1.054E-12
U-234	Ra-226+D4	2.000E-07	4.809E-18	4.091E-17	2.349E-16	2.166E-15	1.780E-14	1.687E-13	1.026E-12	3.606E-12
U-234	Pb-210+D	2.000E-07	7.940E-20	1.105E-18	1.167E-17	2.723E-16	5.426E-15	1.114E-13	9.808E-13	3.962E-12
U-234	Po-210	2.000E-07	1.398E-19	3.446E-18	5.741E-17	1.865E-15	4.202E-14	9.029E-13	8.045E-12	4.101E-11
U-234	ΣDSR(j)		3.051E-10	3.041E-10	3.021E-10	2.951E-10	2.763E-10	2.203E-10	1.234E-10	6.785E-11
U-234	U-234	2.640E-13	4.027E-16	4.014E-16	3.987E-16	3.895E-16	3.645E-16	2.889E-16	1.486E-16	2.405E-17
U-234	Th-230	2.640E-13	2.961E-21	7.873E-21	1.746E-20	5.053E-20	1.408E-19	4.135E-19	9.178E-19	1.391E-18
U-234	Ra-226+D4	2.640E-13	6.348E-24	5.401E-23	3.100E-22	2.859E-21	2.349E-20	2.227E-19	1.354E-18	4.760E-18
U-234	Pb-210+D1	2.640E-13	5.972E-26	1.050E-24	1.306E-23	3.391E-22	7.027E-21	1.464E-19	1.294E-18	5.231E-18
U-234	ΣDSR(j)		4.027E-16	4.014E-16	3.987E-16	3.896E-16	3.647E-16	2.897E-16	1.522E-16	3.543E-17
U-234	U-234	3.800E-15	5.796E-18	5.777E-18	5.739E-18	5.607E-18	5.247E-18	4.158E-18	2.140E-18	3.462E-19
U-234	Th-230	3.800E-15	4.263E-23	1.133E-22	2.514E-22	7.273E-22	2.027E-21	5.952E-21	1.321E-20	2.003E-20
U-234	Ra-226+D4	3.800E-15	9.138E-26	7.774E-25	4.463E-24	4.116E-23	3.381E-22	3.206E-21	1.949E-20	6.851E-20
U-234	Pb-210+D2	3.800E-15	1.290E-27	2.150E-26	2.611E-25	6.698E-24	1.382E-22	2.875E-21	2.540E-20	1.020E-19
U-234	ΣDSR(j)		5.796E-18	5.777E-18	5.739E-18	5.608E-18	5.249E-18	4.170E-18	2.198E-18	5.367E-19
U-238	U-238	5.450E-07	7.464E-10	7.439E-10	7.390E-10	7.220E-10	6.757E-10	5.356E-10	2.758E-10	4.478E-11
U-238+D	U-238+D	1.599E-03	4.857E-04	4.841E-04	4.809E-04	4.699E-04	4.397E-04	3.485E-04	1.795E-04	1.763E-05
U-238+D	U-234	1.599E-03	3.442E-12	1.030E-11	2.387E-11	6.996E-11	1.902E-10	4.966E-10	7.644E-10	4.121E-10
U-238+D	Th-230	1.599E-03	1.883E-17	1.122E-16	5.437E-16	4.570E-15	3.628E-14	3.362E-13	1.975E-12	6.294E-12
U-238+D	Ra-226+D	1.599E-03	3.052E-19	4.664E-18	5.483E-17	1.441E-15	3.371E-14	1.024E-12	1.734E-11	1.502E-10
U-238+D	Pb-210+D	1.599E-03	3.577E-22	1.058E-20	2.419E-19	1.657E-17	9.714E-16	6.881E-14	1.848E-12	2.042E-11
U-238+D	Po-210	1.599E-03	5.388E-22	2.819E-20	1.051E-18	1.071E-16	7.358E-15	5.538E-13	1.513E-11	2.517E-10
U-238+D	ΣDSR(j)		4.857E-04	4.841E-04	4.809E-04	4.699E-04	4.397E-04	3.485E-04	1.795E-04	1.763E-05
U-238+D	U-238+D	2.111E-09	6.412E-10	6.391E-10	6.348E-10	6.202E-10	5.804E-10	4.601E-10	2.369E-10	2.328E-11
U-238+D	U-234	2.111E-09	4.543E-18	1.359E-17	3.150E-17	9.235E-17	2.510E-16	6.556E-16	1.009E-15	5.440E-16
U-238+D	Th-230	2.111E-09	2.485E-23	1.481E-22	7.177E-22	6.032E-21	4.789E-20	4.437E-19	2.607E-18	8.308E-18
U-238+D	Ra-226+D	2.111E-09	4.029E-25	6.157E-24	7.238E-23	1.902E-21	4.449E-20	1.352E-18	2.289E-17	1.983E-16
U-238+D	Pb-210+D1	2.111E-09	2.506E-28	9.404E-27	2.585E-25	2.025E-23	1.249E-21	9.020E-20	2.436E-18	2.695E-17
U-238+D	ΣDSR(j)		6.412E-10	6.391E-10	6.348E-10	6.202E-10	5.804E-10	4.601E-10	2.369E-10	2.328E-11
U-238+D	U-238+D	3.039E-11	9.229E-12	9.199E-12	9.138E-12	8.928E-12	8.354E-12	6.622E-12	3.410E-12	3.350E-13
U-238+D	U-234	3.039E-11	6.540E-20	1.956E-19	4.535E-19	1.329E-18	3.613E-18	9.436E-18	1.452E-17	7.831E-18
U-238+D	Th-230	3.039E-11	3.578E-25	2.131E-24	1.033E-23	8.682E-23	6.893E-22	6.387E-21	3.753E-20	1.196E-19
U-238+D	Ra-226+D	3.039E-11	5.799E-27	8.862E-26	1.042E-24	2.738E-23	6.405E-22	1.947E-20	3.295E-19	2.855E-18
U-238+D	Pb-210+D2	3.039E-11	5.552E-30	1.952E-28	5.203E-27	4.008E-25	2.459E-23	1.772E-21	4.784E-20	5.221E-19
U-238+D	ΣDSR(j)		9.229E-12	9.199E-12	9.138E-12	8.928E-12	8.354E-12	6.622E-12	3.410E-12	3.350E-13

Summary : Recreator_Soil + Game and Fowl

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	3.359E-07	1.020E-07	1.017E-07	1.010E-07	9.870E-08	9.236E-08	7.321E-08	3.769E-08	3.704E-09
U-238+D	U-234	3.359E-07	7.230E-16	2.163E-15	5.013E-15	1.469E-14	3.994E-14	1.043E-13	1.606E-13	8.657E-14
U-238+D	Th-230	3.359E-07	3.955E-21	2.356E-20	1.142E-19	9.598E-19	7.620E-18	7.061E-17	4.149E-16	1.322E-15
U-238+D	Ra-226+D1	3.359E-07	1.588E-22	2.398E-21	2.800E-20	7.326E-19	1.711E-17	5.199E-16	8.800E-15	7.599E-14
U-238+D	Pb-210+D	3.359E-07	7.493E-26	2.220E-24	5.081E-23	3.481E-21	2.040E-19	1.445E-17	3.882E-16	4.289E-15
U-238+D	Po-210	3.359E-07	1.131E-25	5.921E-24	2.207E-22	2.250E-20	1.545E-18	1.163E-16	3.178E-15	5.288E-14
U-238+D	ΣDSR(j)		1.020E-07	1.017E-07	1.010E-07	9.870E-08	9.236E-08	7.321E-08	3.769E-08	3.704E-09
U-238+D	U-238+D	4.434E-13	1.347E-13	1.342E-13	1.333E-13	1.303E-13	1.219E-13	9.664E-14	4.976E-14	4.889E-15
U-238+D	U-234	4.434E-13	9.543E-22	2.855E-21	6.617E-21	1.940E-20	5.272E-20	1.377E-19	2.119E-19	1.143E-19
U-238+D	Th-230	4.434E-13	5.221E-27	3.110E-26	1.508E-25	1.267E-24	1.006E-23	9.321E-23	5.476E-22	1.745E-21
U-238+D	Ra-226+D1	4.434E-13	2.096E-28	3.165E-27	3.695E-26	9.671E-25	2.259E-23	6.862E-22	1.162E-20	1.003E-19
U-238+D	Pb-210+D1	4.434E-13	5.264E-32	1.975E-30	5.430E-29	4.253E-27	2.623E-25	1.895E-23	5.117E-22	5.661E-21
U-238+D	ΣDSR(j)		1.347E-13	1.342E-13	1.333E-13	1.303E-13	1.219E-13	9.664E-14	4.976E-14	4.889E-15
U-238+D	U-238+D	6.383E-15	1.939E-15	1.932E-15	1.919E-15	1.875E-15	1.755E-15	1.391E-15	7.162E-16	7.037E-17
U-238+D	U-234	6.383E-15	1.374E-23	4.109E-23	9.525E-23	2.792E-22	7.589E-22	1.982E-21	3.050E-21	1.645E-21
U-238+D	Th-230	6.383E-15	7.514E-29	4.477E-28	2.170E-27	1.824E-26	1.448E-25	1.342E-24	7.882E-24	2.512E-23
U-238+D	Ra-226+D1	6.383E-15	3.017E-30	4.556E-29	5.319E-28	1.392E-26	3.252E-25	9.878E-24	1.672E-22	1.444E-21
U-238+D	Pb-210+D2	6.383E-15	1.166E-33	4.099E-32	1.093E-30	8.418E-29	5.164E-27	3.722E-25	1.005E-23	1.097E-22
U-238+D	ΣDSR(j)		1.939E-15	1.932E-15	1.919E-15	1.875E-15	1.755E-15	1.391E-15	7.162E-16	7.037E-17
U-238+D	U-238+D	3.196E-07	9.707E-08	9.675E-08	9.611E-08	9.390E-08	8.787E-08	6.965E-08	3.586E-08	3.524E-09
U-238+D	U-234	3.196E-07	6.879E-16	2.057E-15	4.770E-15	1.398E-14	3.800E-14	9.925E-14	1.528E-13	8.236E-14
U-238+D	Th-230	3.196E-07	3.763E-21	2.242E-20	1.087E-19	9.132E-19	7.250E-18	6.718E-17	3.947E-16	1.258E-15
U-238+D	Ra-226+D2	3.196E-07	5.403E-23	8.288E-22	9.764E-21	2.569E-19	6.012E-18	1.827E-16	3.094E-15	2.682E-14
U-238+D	Pb-210+D	3.196E-07	7.129E-26	2.112E-24	4.834E-23	3.312E-21	1.941E-19	1.375E-17	3.694E-16	4.081E-15
U-238+D	Po-210	3.196E-07	1.077E-25	5.634E-24	2.100E-22	2.141E-20	1.470E-18	1.107E-16	3.023E-15	5.031E-14
U-238+D	ΣDSR(j)		9.707E-08	9.675E-08	9.611E-08	9.390E-08	8.787E-08	6.965E-08	3.586E-08	3.524E-09
U-238+D	U-238+D	4.219E-13	1.281E-13	1.277E-13	1.269E-13	1.240E-13	1.160E-13	9.194E-14	4.734E-14	4.651E-15
U-238+D	U-234	4.219E-13	9.080E-22	2.716E-21	6.296E-21	1.845E-20	5.016E-20	1.310E-19	2.016E-19	1.087E-19
U-238+D	Th-230	4.219E-13	4.967E-27	2.959E-26	1.434E-25	1.205E-24	9.570E-24	8.868E-23	5.210E-22	1.660E-21
U-238+D	Ra-226+D2	4.219E-13	7.131E-29	1.094E-27	1.289E-26	3.391E-25	7.936E-24	2.412E-22	4.084E-21	3.540E-20
U-238+D	Pb-210+D1	4.219E-13	5.008E-32	1.879E-30	5.166E-29	4.047E-27	2.496E-25	1.803E-23	4.868E-22	5.386E-21
U-238+D	ΣDSR(j)		1.281E-13	1.277E-13	1.269E-13	1.240E-13	1.160E-13	9.194E-14	4.734E-14	4.651E-15
U-238+D	U-238+D	6.073E-15	1.844E-15	1.838E-15	1.826E-15	1.784E-15	1.670E-15	1.323E-15	6.814E-16	6.695E-17
U-238+D	U-234	6.073E-15	1.307E-23	3.909E-23	9.062E-23	2.656E-22	7.220E-22	1.886E-21	2.902E-21	1.565E-21
U-238+D	Th-230	6.073E-15	7.149E-29	4.260E-28	2.065E-27	1.735E-26	1.377E-25	1.276E-24	7.499E-24	2.390E-23
U-238+D	Ra-226+D2	6.073E-15	1.026E-30	1.575E-29	1.855E-28	4.881E-27	1.142E-25	3.472E-24	5.879E-23	5.096E-22
U-238+D	Pb-210+D2	6.073E-15	1.109E-33	3.900E-32	1.040E-30	8.009E-29	4.913E-27	3.541E-25	9.559E-24	1.043E-22
U-238+D	ΣDSR(j)		1.844E-15	1.838E-15	1.826E-15	1.784E-15	1.670E-15	1.323E-15	6.814E-16	6.695E-17

Summary : Recreator_Soil + Game and Fowl

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	6.713E-11	2.039E-11	2.032E-11	2.019E-11	1.972E-11	1.846E-11	1.463E-11	7.533E-12	7.401E-13
U-238+D	U-234	6.713E-11	1.445E-19	4.322E-19	1.002E-18	2.937E-18	7.982E-18	2.085E-17	3.208E-17	1.730E-17
U-238+D	Th-230	6.713E-11	7.904E-25	4.709E-24	2.282E-23	1.918E-22	1.523E-21	1.411E-20	8.291E-20	2.642E-19
U-238+D	Ra-226+D3	6.713E-11	3.029E-26	4.577E-25	5.345E-24	1.399E-22	3.268E-21	9.927E-20	1.680E-18	1.451E-17
U-238+D	Pb-210+D	6.713E-11	1.497E-29	4.436E-28	1.015E-26	6.956E-25	4.077E-23	2.888E-21	7.759E-20	8.572E-19
U-238+D	Po-210	6.713E-11	2.261E-29	1.183E-27	4.411E-26	4.497E-24	3.088E-22	2.324E-20	6.350E-19	1.057E-17
U-238+D	ΣDSR(j)		2.039E-11	2.032E-11	2.019E-11	1.972E-11	1.846E-11	1.463E-11	7.533E-12	7.402E-13
U-238+D	U-238+D	8.862E-17	2.691E-17	2.682E-17	2.665E-17	2.604E-17	2.436E-17	1.931E-17	9.943E-18	9.770E-19
U-238+D	U-234	8.862E-17	1.907E-25	5.705E-25	1.322E-24	3.876E-24	1.054E-23	2.752E-23	4.235E-23	2.284E-23
U-238+D	Th-230	8.862E-17	1.043E-30	6.216E-30	3.013E-29	2.532E-28	2.010E-27	1.863E-26	1.094E-25	3.487E-25
U-238+D	Ra-226+D3	8.862E-17	3.999E-32	6.042E-31	7.055E-30	1.847E-28	4.314E-27	1.310E-25	2.218E-24	1.916E-23
U-238+D	Pb-210+D1	8.862E-17	1.052E-35	3.947E-34	1.085E-32	8.500E-31	5.243E-29	3.786E-27	1.023E-25	1.131E-24
U-238+D	ΣDSR(j)		2.691E-17	2.682E-17	2.665E-17	2.604E-17	2.436E-17	1.931E-17	9.943E-18	9.770E-19
U-238+D	U-238+D	1.276E-18	3.874E-19	3.861E-19	3.836E-19	3.747E-19	3.507E-19	2.780E-19	1.431E-19	1.406E-20
U-238+D	U-234	1.276E-18	2.745E-27	8.211E-27	1.903E-26	5.579E-26	1.517E-25	3.961E-25	6.096E-25	3.287E-25
U-238+D	Th-230	1.276E-18	1.502E-32	8.947E-32	4.336E-31	3.644E-30	2.893E-29	2.681E-28	1.575E-27	5.020E-27
U-238+D	Ra-226+D3	1.276E-18	5.756E-34	8.697E-33	1.016E-31	2.658E-30	6.209E-29	1.886E-27	3.193E-26	2.757E-25
U-238+D	Pb-210+D2	1.276E-18	2.330E-37	8.192E-36	2.184E-34	1.682E-32	1.032E-30	7.439E-29	2.008E-27	2.192E-26
U-238+D	ΣDSR(j)		3.874E-19	3.861E-19	3.836E-19	3.747E-19	3.507E-19	2.780E-19	1.431E-19	1.406E-20
U-238+D	U-238+D	3.200E-10	9.719E-11	9.687E-11	9.623E-11	9.402E-11	8.798E-11	6.974E-11	3.591E-11	3.528E-12
U-238+D	U-234	3.200E-10	6.887E-19	2.060E-18	4.775E-18	1.400E-17	3.805E-17	9.937E-17	1.529E-16	8.246E-17
U-238+D	Th-230	3.200E-10	3.767E-24	2.245E-23	1.088E-22	9.143E-22	7.259E-21	6.726E-20	3.952E-19	1.259E-18
U-238+D	Ra-226+D4	3.200E-10	4.840E-27	9.256E-26	1.213E-24	3.381E-23	8.065E-22	2.469E-20	4.188E-19	3.771E-18
U-238+D	Pb-210+D	3.200E-10	7.138E-29	2.115E-27	4.840E-26	3.316E-24	1.944E-22	1.377E-20	3.698E-19	4.086E-18
U-238+D	Po-210	3.200E-10	1.078E-28	5.641E-27	2.102E-25	2.144E-23	1.472E-21	1.108E-19	3.027E-18	5.037E-17
U-238+D	ΣDSR(j)		9.719E-11	9.687E-11	9.623E-11	9.402E-11	8.798E-11	6.974E-11	3.591E-11	3.528E-12
U-238+D	U-238+D	4.224E-16	1.283E-16	1.279E-16	1.270E-16	1.241E-16	1.161E-16	9.205E-17	4.740E-17	4.657E-18
U-238+D	U-234	4.224E-16	9.091E-25	2.719E-24	6.303E-24	1.848E-23	5.022E-23	1.312E-22	2.019E-22	1.089E-22
U-238+D	Th-230	4.224E-16	4.973E-30	2.963E-29	1.436E-28	1.207E-27	9.582E-27	8.879E-26	5.216E-25	1.662E-24
U-238+D	Ra-226+D4	4.224E-16	6.389E-33	1.222E-31	1.601E-30	4.463E-29	1.065E-27	3.258E-26	5.528E-25	4.978E-24
U-238+D	Pb-210+D1	4.224E-16	5.014E-35	1.882E-33	5.173E-32	4.051E-30	2.499E-28	1.805E-26	4.874E-25	5.393E-24
U-238+D	ΣDSR(j)		1.283E-16	1.279E-16	1.270E-16	1.241E-16	1.161E-16	9.205E-17	4.740E-17	4.657E-18
U-238+D	U-238+D	6.080E-18	1.847E-18	1.840E-18	1.828E-18	1.786E-18	1.672E-18	1.325E-18	6.822E-19	6.703E-20
U-238+D	U-234	6.080E-18	1.309E-26	3.914E-26	9.073E-26	2.660E-25	7.229E-25	1.888E-24	2.906E-24	1.567E-24
U-238+D	Th-230	6.080E-18	7.158E-32	4.265E-31	2.067E-30	1.737E-29	1.379E-28	1.278E-27	7.509E-27	2.393E-26
U-238+D	Ra-226+D4	6.080E-18	9.197E-35	1.759E-33	2.305E-32	6.424E-31	1.532E-29	4.690E-28	7.957E-27	7.165E-26
U-238+D	Pb-210+D2	6.080E-18	1.111E-36	3.905E-35	1.041E-33	8.019E-32	4.919E-30	3.546E-28	9.571E-27	1.045E-25
U-238+D	ΣDSR(j)		1.847E-18	1.840E-18	1.828E-18	1.786E-18	1.672E-18	1.325E-18	6.822E-19	6.703E-20

Summary : Recreator_Soil + Game and Fowl

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	9.980E-01	6.828E-03	6.806E-03	6.761E-03	6.605E-03	6.181E-03	4.900E-03	2.523E-03	2.821E-04
U-238+D1	U-234	9.980E-01	2.148E-09	6.425E-09	1.489E-08	4.365E-08	1.187E-07	3.099E-07	4.770E-07	2.572E-07
U-238+D1	Th-230	9.980E-01	1.175E-14	7.000E-14	3.393E-13	2.851E-12	2.264E-11	2.098E-10	1.232E-09	3.927E-09
U-238+D1	Ra-226+D	9.980E-01	1.905E-16	2.911E-15	3.422E-14	8.991E-13	2.103E-11	6.393E-10	1.082E-08	9.375E-08
U-238+D1	Pb-210+D	9.980E-01	2.232E-19	6.599E-18	1.510E-16	1.034E-14	6.062E-13	4.294E-11	1.153E-09	1.274E-08
U-238+D1	Po-210	9.980E-01	3.362E-19	1.759E-17	6.557E-16	6.686E-14	4.591E-12	3.455E-10	9.440E-09	1.571E-07
U-238+D1	ΣDSR(j)		6.828E-03	6.806E-03	6.761E-03	6.605E-03	6.181E-03	4.900E-03	2.523E-03	2.826E-04
U-238+D1	U-238+D1	1.317E-06	9.013E-09	8.984E-09	8.924E-09	8.719E-09	8.159E-09	6.468E-09	3.330E-09	3.723E-10
U-238+D1	U-234	1.317E-06	2.835E-15	8.480E-15	1.966E-14	5.762E-14	1.566E-13	4.091E-13	6.296E-13	3.395E-13
U-238+D1	Th-230	1.317E-06	1.551E-20	9.240E-20	4.479E-19	3.764E-18	2.988E-17	2.769E-16	1.627E-15	5.184E-15
U-238+D1	Ra-226+D	1.317E-06	2.514E-22	3.842E-21	4.517E-20	1.187E-18	2.776E-17	8.438E-16	1.429E-14	1.238E-13
U-238+D1	Pb-210+D1	1.317E-06	1.564E-25	5.868E-24	1.613E-22	1.264E-20	7.794E-19	5.629E-17	1.520E-15	1.682E-14
U-238+D1	ΣDSR(j)		9.013E-09	8.984E-09	8.924E-09	8.719E-09	8.159E-09	6.468E-09	3.331E-09	3.728E-10
U-238+D1	U-238+D1	1.896E-08	1.297E-10	1.293E-10	1.285E-10	1.255E-10	1.174E-10	9.309E-11	4.793E-11	5.360E-12
U-238+D1	U-234	1.896E-08	4.081E-17	1.221E-16	2.830E-16	8.294E-16	2.255E-15	5.888E-15	9.062E-15	4.886E-15
U-238+D1	Th-230	1.896E-08	2.232E-22	1.330E-21	6.446E-21	5.418E-20	4.301E-19	3.986E-18	2.342E-17	7.462E-17
U-238+D1	Ra-226+D	1.896E-08	3.619E-24	5.530E-23	6.501E-22	1.708E-20	3.996E-19	1.215E-17	2.056E-16	1.781E-15
U-238+D1	Pb-210+D2	1.896E-08	3.464E-27	1.218E-25	3.247E-24	2.501E-22	1.534E-20	1.106E-18	2.985E-17	3.258E-16
U-238+D1	ΣDSR(j)		1.297E-10	1.293E-10	1.285E-10	1.255E-10	1.174E-10	9.310E-11	4.794E-11	5.367E-12
U-238+D1	U-238+D1	2.096E-04	1.434E-06	1.429E-06	1.420E-06	1.387E-06	1.298E-06	1.029E-06	5.299E-07	5.925E-08
U-238+D1	U-234	2.096E-04	4.511E-13	1.349E-12	3.128E-12	9.169E-12	2.492E-11	6.509E-11	1.002E-10	5.402E-11
U-238+D1	Th-230	2.096E-04	2.468E-18	1.470E-17	7.126E-17	5.989E-16	4.755E-15	4.406E-14	2.589E-13	8.249E-13
U-238+D1	Ra-226+D1	2.096E-04	9.908E-20	1.496E-18	1.747E-17	4.572E-16	1.068E-14	3.244E-13	5.491E-12	4.742E-11
U-238+D1	Pb-210+D	2.096E-04	4.676E-23	1.385E-21	3.170E-20	2.172E-18	1.273E-16	9.018E-15	2.423E-13	2.677E-12
U-238+D1	Po-210	2.096E-04	7.060E-23	3.695E-21	1.377E-19	1.404E-17	9.644E-16	7.258E-14	1.983E-12	3.299E-11
U-238+D1	ΣDSR(j)		1.434E-06	1.429E-06	1.420E-06	1.387E-06	1.298E-06	1.029E-06	5.300E-07	5.939E-08
U-238+D1	U-238+D1	2.767E-10	1.893E-12	1.887E-12	1.874E-12	1.831E-12	1.714E-12	1.358E-12	6.994E-13	7.821E-14
U-238+D1	U-234	2.767E-10	5.955E-19	1.781E-18	4.129E-18	1.210E-17	3.290E-17	8.592E-17	1.322E-16	7.130E-17
U-238+D1	Th-230	2.767E-10	3.258E-24	1.941E-23	9.407E-23	7.906E-22	6.277E-21	5.816E-20	3.417E-19	1.089E-18
U-238+D1	Ra-226+D1	2.767E-10	1.308E-25	1.975E-24	2.306E-23	6.035E-22	1.410E-20	4.282E-19	7.249E-18	6.259E-17
U-238+D1	Pb-210+D1	2.767E-10	3.285E-29	1.233E-27	3.388E-26	2.654E-24	1.637E-22	1.182E-20	3.193E-19	3.533E-18
U-238+D1	ΣDSR(j)		1.893E-12	1.887E-12	1.874E-12	1.831E-12	1.714E-12	1.359E-12	6.996E-13	7.835E-14
U-238+D1	U-238+D1	3.983E-12	2.725E-14	2.716E-14	2.698E-14	2.636E-14	2.467E-14	1.955E-14	1.007E-14	1.126E-15
U-238+D1	U-234	3.983E-12	8.572E-21	2.564E-20	5.944E-20	1.742E-19	4.736E-19	1.237E-18	1.903E-18	1.026E-18
U-238+D1	Th-230	3.983E-12	4.689E-26	2.794E-25	1.354E-24	1.138E-23	9.034E-23	8.372E-22	4.919E-21	1.567E-20
U-238+D1	Ra-226+D1	3.983E-12	1.883E-27	2.843E-26	3.319E-25	8.686E-24	2.029E-22	6.164E-21	1.043E-19	9.009E-19
U-238+D1	Pb-210+D2	3.983E-12	7.277E-31	2.558E-29	6.819E-28	5.253E-26	3.223E-24	2.323E-22	6.270E-21	6.844E-20
U-238+D1	ΣDSR(j)		2.725E-14	2.716E-14	2.698E-14	2.636E-14	2.467E-14	1.956E-14	1.007E-14	1.128E-15

Summary : Recreator_Soil + Game and Fowl

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.994E-04	1.365E-06	1.360E-06	1.351E-06	1.320E-06	1.235E-06	9.791E-07	5.041E-07	5.637E-08
U-238+D1	U-234	1.994E-04	4.292E-13	1.284E-12	2.976E-12	8.724E-12	2.371E-11	6.193E-11	9.532E-11	5.139E-11
U-238+D1	Th-230	1.994E-04	2.348E-18	1.399E-17	6.780E-17	5.698E-16	4.524E-15	4.192E-14	2.463E-13	7.849E-13
U-238+D1	Ra-226+D2	1.994E-04	3.371E-20	5.172E-19	6.093E-18	1.603E-16	3.751E-15	1.140E-13	1.931E-12	1.673E-11
U-238+D1	Pb-210+D	1.994E-04	4.449E-23	1.318E-21	3.016E-20	2.067E-18	1.211E-16	8.580E-15	2.305E-13	2.547E-12
U-238+D1	Po-210	1.994E-04	6.717E-23	3.515E-21	1.310E-19	1.336E-17	9.175E-16	6.905E-14	1.887E-12	3.139E-11
U-238+D1	ΣDSR(j)		1.365E-06	1.360E-06	1.351E-06	1.320E-06	1.235E-06	9.792E-07	5.042E-07	5.647E-08
U-238+D1	U-238+D1	2.633E-10	1.801E-12	1.795E-12	1.783E-12	1.742E-12	1.631E-12	1.292E-12	6.655E-13	7.441E-14
U-238+D1	U-234	2.633E-10	5.666E-19	1.695E-18	3.929E-18	1.152E-17	3.130E-17	8.175E-17	1.258E-16	6.784E-17
U-238+D1	Th-230	2.633E-10	3.099E-24	1.847E-23	8.950E-23	7.522E-22	5.972E-21	5.533E-20	3.251E-19	1.036E-18
U-238+D1	Ra-226+D2	2.633E-10	4.450E-26	6.827E-25	8.042E-24	2.116E-22	4.952E-21	1.505E-19	2.548E-18	2.209E-17
U-238+D1	Pb-210+D1	2.633E-10	3.125E-29	1.173E-27	3.224E-26	2.525E-24	1.558E-22	1.125E-20	3.038E-19	3.361E-18
U-238+D1	ΣDSR(j)		1.801E-12	1.795E-12	1.783E-12	1.742E-12	1.631E-12	1.293E-12	6.656E-13	7.450E-14
U-238+D1	U-238+D1	3.789E-12	2.593E-14	2.584E-14	2.567E-14	2.508E-14	2.347E-14	1.860E-14	9.579E-15	1.071E-15
U-238+D1	U-234	3.789E-12	8.155E-21	2.439E-20	5.655E-20	1.658E-19	4.505E-19	1.177E-18	1.811E-18	9.765E-19
U-238+D1	Th-230	3.789E-12	4.461E-26	2.658E-25	1.288E-24	1.083E-23	8.596E-23	7.965E-22	4.680E-21	1.491E-20
U-238+D1	Ra-226+D2	3.789E-12	6.405E-28	9.827E-27	1.158E-25	3.046E-24	7.128E-23	2.167E-21	3.668E-20	3.180E-19
U-238+D1	Pb-210+D2	3.789E-12	6.923E-31	2.434E-29	6.488E-28	4.998E-26	3.066E-24	2.210E-22	5.965E-21	6.511E-20
U-238+D1	ΣDSR(j)		2.593E-14	2.584E-14	2.567E-14	2.508E-14	2.347E-14	1.860E-14	9.581E-15	1.072E-15
U-238+D1	U-238+D1	4.189E-08	2.866E-10	2.857E-10	2.838E-10	2.773E-10	2.595E-10	2.057E-10	1.059E-10	1.184E-11
U-238+D1	U-234	4.189E-08	9.016E-17	2.697E-16	6.251E-16	1.832E-15	4.981E-15	1.301E-14	2.002E-14	1.080E-14
U-238+D1	Th-230	4.189E-08	4.932E-22	2.938E-21	1.424E-20	1.197E-19	9.502E-19	8.805E-18	5.173E-17	1.649E-16
U-238+D1	Ra-226+D3	4.189E-08	1.890E-23	2.856E-22	3.335E-21	8.729E-20	2.039E-18	6.195E-17	1.049E-15	9.055E-15
U-238+D1	Pb-210+D	4.189E-08	9.344E-27	2.768E-25	6.335E-24	4.341E-22	2.544E-20	1.802E-18	4.841E-17	5.349E-16
U-238+D1	Po-210	4.189E-08	1.411E-26	7.384E-25	2.752E-23	2.806E-21	1.927E-19	1.450E-17	3.963E-16	6.594E-15
U-238+D1	ΣDSR(j)		2.866E-10	2.857E-10	2.838E-10	2.773E-10	2.595E-10	2.057E-10	1.059E-10	1.187E-11
U-238+D1	U-238+D1	5.530E-14	3.783E-16	3.771E-16	3.746E-16	3.660E-16	3.425E-16	2.715E-16	1.398E-16	1.563E-17
U-238+D1	U-234	5.530E-14	1.190E-22	3.560E-22	8.252E-22	2.419E-21	6.575E-21	1.717E-20	2.643E-20	1.425E-20
U-238+D1	Th-230	5.530E-14	6.510E-28	3.879E-27	1.880E-26	1.580E-25	1.254E-24	1.162E-23	6.829E-23	2.176E-22
U-238+D1	Ra-226+D3	5.530E-14	2.495E-29	3.770E-28	4.403E-27	1.152E-25	2.692E-24	8.177E-23	1.384E-21	1.195E-20
U-238+D1	Pb-210+D1	5.530E-14	6.564E-33	2.463E-31	6.771E-30	5.304E-28	3.271E-26	2.363E-24	6.381E-23	7.059E-22
U-238+D1	ΣDSR(j)		3.783E-16	3.771E-16	3.746E-16	3.660E-16	3.425E-16	2.715E-16	1.398E-16	1.566E-17
U-238+D1	U-238+D1	7.959E-16	5.446E-18	5.428E-18	5.392E-18	5.268E-18	4.930E-18	3.908E-18	2.012E-18	2.250E-19
U-238+D1	U-234	7.959E-16	1.713E-24	5.124E-24	1.188E-23	3.482E-23	9.463E-23	2.472E-22	3.804E-22	2.051E-22
U-238+D1	Th-230	7.959E-16	9.370E-30	5.583E-29	2.706E-28	2.274E-27	1.805E-26	1.673E-25	9.829E-25	3.132E-24
U-238+D1	Ra-226+D3	7.959E-16	3.592E-31	5.427E-30	6.337E-29	1.659E-27	3.875E-26	1.177E-24	1.992E-23	1.721E-22
U-238+D1	Pb-210+D2	7.959E-16	1.454E-34	5.112E-33	1.363E-31	1.050E-29	6.440E-28	4.642E-26	1.253E-24	1.368E-23
U-238+D1	ΣDSR(j)		5.446E-18	5.428E-18	5.392E-18	5.268E-18	4.930E-18	3.908E-18	2.012E-18	2.254E-19

Summary : Recreator_Soil + Game and Fowl

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.997E-07	1.366E-09	1.362E-09	1.353E-09	1.322E-09	1.237E-09	9.803E-10	5.048E-10	5.644E-11
U-238+D1	U-234	1.997E-07	4.297E-16	1.285E-15	2.980E-15	8.734E-15	2.374E-14	6.201E-14	9.543E-14	5.146E-14
U-238+D1	Th-230	1.997E-07	2.351E-21	1.401E-20	6.788E-20	5.705E-19	4.529E-18	4.197E-17	2.466E-16	7.858E-16
U-238+D1	Ra-226+D4	1.997E-07	3.020E-24	5.776E-23	7.570E-22	2.110E-20	5.032E-19	1.540E-17	2.613E-16	2.353E-15
U-238+D1	Pb-210+D	1.997E-07	4.454E-26	1.319E-24	3.020E-23	2.069E-21	1.213E-19	8.591E-18	2.308E-16	2.550E-15
U-238+D1	Po-210	1.997E-07	6.726E-26	3.520E-24	1.312E-22	1.338E-20	9.186E-19	6.914E-17	1.889E-15	3.143E-14
U-238+D1	ΣDSR(j)		1.366E-09	1.362E-09	1.353E-09	1.322E-09	1.237E-09	9.804E-10	5.048E-10	5.653E-11
U-238+D1	U-238+D1	2.636E-13	1.803E-15	1.797E-15	1.786E-15	1.745E-15	1.632E-15	1.294E-15	6.663E-16	7.450E-17
U-238+D1	U-234	2.636E-13	5.673E-22	1.697E-21	3.933E-21	1.153E-20	3.134E-20	8.185E-20	1.260E-19	6.792E-20
U-238+D1	Th-230	2.636E-13	3.103E-27	1.849E-26	8.961E-26	7.531E-25	5.979E-24	5.540E-23	3.255E-22	1.037E-21
U-238+D1	Ra-226+D4	2.636E-13	3.987E-30	7.624E-29	9.992E-28	2.785E-26	6.643E-25	2.033E-23	3.449E-22	3.106E-21
U-238+D1	Pb-210+D1	2.636E-13	3.129E-32	1.174E-30	3.228E-29	2.528E-27	1.559E-25	1.126E-23	3.041E-22	3.365E-21
U-238+D1	ΣDSR(j)		1.803E-15	1.797E-15	1.786E-15	1.745E-15	1.633E-15	1.294E-15	6.664E-16	7.458E-17
U-238+D1	U-238+D1	3.794E-15	2.596E-17	2.587E-17	2.570E-17	2.511E-17	2.350E-17	1.863E-17	9.590E-18	1.072E-18
U-238+D1	U-234	3.794E-15	8.165E-24	2.442E-23	5.662E-23	1.660E-22	4.511E-22	1.178E-21	1.813E-21	9.777E-22
U-238+D1	Th-230	3.794E-15	4.467E-29	2.661E-28	1.290E-27	1.084E-26	8.606E-26	7.975E-25	4.685E-24	1.493E-23
U-238+D1	Ra-226+D4	3.794E-15	5.739E-32	1.097E-30	1.438E-29	4.009E-28	9.561E-27	2.927E-25	4.965E-24	4.471E-23
U-238+D1	Pb-210+D2	3.794E-15	6.931E-34	2.437E-32	6.496E-31	5.004E-29	3.070E-27	2.213E-25	5.972E-24	6.519E-23
U-238+D1	ΣDSR(j)		2.596E-17	2.587E-17	2.570E-17	2.511E-17	2.350E-17	1.863E-17	9.592E-18	1.073E-18

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Nuclide										
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Pb-210	3.735E+01	2.393E+01	2.381E+01	2.992E+01	5.776E+01	5.773E+02	4.148E+05	*7.632E+13		
Po-210	5.086E+01	3.220E+02	1.292E+04	5.282E+09	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15		
Ra-226	2.790E+01	2.711E+01	2.542E+01	2.141E+01	1.696E+01	1.628E+01	2.773E+01	1.343E+02		
Th-230	5.761E+03	5.283E+03	4.498E+03	2.831E+03	1.222E+03	3.673E+02	1.454E+02	8.421E+01		
U-234	7.867E+03	7.893E+03	7.945E+03	8.131E+03	8.682E+03	1.083E+04	1.834E+04	2.566E+04		
U-238	1.640E+03	1.645E+03	1.656E+03	1.695E+03	1.812E+03	2.285E+03	4.438E+03	3.995E+04		

*At specific activity limit

Summary : Recreator_Soil + Game and Fowl

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Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Pb-210	1.000E+00	1.754 ± 0.004	5.166E-01	2.323E+01	3.213E-01	3.735E+01
Po-210	1.000E+00	0.000E+00	2.360E-01	5.086E+01	2.360E-01	5.086E+01
Ra-226	1.000E+00	63.5 ± 0.1	7.689E-01	1.561E+01	4.301E-01	2.790E+01
Th-230	1.000E+00	1.000E+03	1.425E-01	8.421E+01	2.083E-03	5.761E+03
U-234	1.000E+00	0.000E+00	1.525E-03	7.867E+03	1.525E-03	7.867E+03
U-238	1.000E+00	0.000E+00	7.317E-03	1.640E+03	7.317E-03	1.640E+03

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	5.912E-02	5.721E-02	5.357E-02	4.255E-02	2.204E-02	2.206E-03	3.070E-06	3.154E-16
Pb-210	Pb-210	1.320E-06	7.864E-08	7.610E-08	7.125E-08	5.660E-08	2.932E-08	2.934E-09	4.083E-12	4.195E-22
Pb-210	Ra-226	9.996E-01	1.151E-03	2.999E-03	6.429E-03	1.665E-02	3.461E-02	4.494E-02	2.694E-02	4.083E-03
Pb-210	Ra-226	2.100E-04	2.418E-07	6.299E-07	1.350E-06	3.498E-06	7.270E-06	9.440E-06	5.658E-06	8.576E-07
Pb-210	Ra-226	1.998E-04	2.300E-07	5.993E-07	1.285E-06	3.328E-06	6.917E-06	8.982E-06	5.384E-06	8.159E-07
Pb-210	Ra-226	4.196E-08	4.832E-11	1.259E-10	2.698E-10	6.990E-10	1.453E-09	1.887E-09	1.131E-09	1.714E-10
Pb-210	Ra-226	2.000E-07	2.303E-10	6.000E-10	1.286E-09	3.332E-09	6.926E-09	8.992E-09	5.390E-09	8.169E-10
Pb-210	Th-230	9.996E-01	1.707E-07	1.078E-06	5.180E-06	4.083E-05	2.728E-04	1.584E-03	4.677E-03	8.231E-03
Pb-210	Th-230	2.100E-04	3.585E-11	2.265E-10	1.088E-09	8.577E-09	5.730E-08	3.326E-07	9.824E-07	1.729E-06
Pb-210	Th-230	1.998E-04	3.411E-11	2.154E-10	1.035E-09	8.160E-09	5.451E-08	3.165E-07	9.347E-07	1.645E-06
Pb-210	Th-230	4.196E-08	7.164E-15	4.525E-14	2.174E-13	1.714E-12	1.145E-11	6.647E-11	1.963E-10	3.455E-10
Pb-210	Th-230	2.000E-07	3.415E-14	2.157E-13	1.036E-12	8.170E-12	5.458E-11	3.168E-10	9.358E-10	1.647E-09
Pb-210	U-234	9.996E-01	3.973E-13	5.522E-12	5.834E-11	1.361E-09	2.712E-08	5.568E-07	4.902E-06	1.980E-05
Pb-210	U-234	2.100E-04	8.335E-17	1.160E-15	1.225E-14	2.859E-13	5.696E-12	1.169E-10	1.030E-09	4.159E-09
Pb-210	U-234	1.998E-04	7.930E-17	1.103E-15	1.166E-14	2.720E-13	5.419E-12	1.113E-10	9.796E-10	3.957E-09
Pb-210	U-234	4.196E-08	1.666E-20	2.317E-19	2.449E-18	5.713E-17	1.138E-15	2.337E-14	2.058E-13	8.312E-13
Pb-210	U-234	2.000E-07	7.940E-20	1.105E-18	1.167E-17	2.723E-16	5.426E-15	1.114E-13	9.808E-13	3.962E-12
Pb-210	U-238	1.599E-03	3.577E-22	1.058E-20	2.419E-19	1.657E-17	9.714E-16	6.881E-14	1.848E-12	2.042E-11
Pb-210	U-238	3.359E-07	7.493E-26	2.220E-24	5.081E-23	3.481E-21	2.040E-19	1.445E-17	3.882E-16	4.289E-15
Pb-210	U-238	3.196E-07	7.129E-26	2.112E-24	4.834E-23	3.312E-21	1.941E-19	1.375E-17	3.694E-16	4.081E-15
Pb-210	U-238	6.713E-11	1.488E-29	4.436E-28	1.015E-26	6.956E-25	4.077E-23	2.888E-21	7.759E-20	8.572E-19
Pb-210	U-238	3.200E-10	7.093E-29	2.114E-27	4.840E-26	3.316E-24	1.944E-22	1.377E-20	3.698E-19	4.086E-18
Pb-210	U-238	9.980E-01	2.232E-19	6.599E-18	1.510E-16	1.034E-14	6.062E-13	4.294E-11	1.153E-09	1.274E-08
Pb-210	U-238	2.096E-04	4.676E-23	1.385E-21	3.170E-20	2.172E-18	1.273E-16	9.018E-15	2.423E-13	2.677E-12
Pb-210	U-238	1.994E-04	4.449E-23	1.318E-21	3.016E-20	2.067E-18	1.211E-16	8.580E-15	2.305E-13	2.547E-12
Pb-210	U-238	4.189E-08	9.344E-27	2.768E-25	6.335E-24	4.341E-22	2.544E-20	1.802E-18	4.841E-17	5.349E-16
Pb-210	U-238	1.997E-07	4.454E-26	1.319E-24	3.020E-23	2.069E-21	1.213E-19	8.591E-18	2.308E-16	2.550E-15
Pb-210	ΣDOSE(j)		6.028E-02	6.021E-02	6.001E-02	5.925E-02	5.695E-02	4.875E-02	3.164E-02	1.234E-02
Po-210	Pb-210	1.000E+00	2.622E-01	4.443E-01	4.503E-01	3.585E-01	1.857E-01	1.858E-02	2.586E-05	3.229E-15
Po-210	Po-210	1.000E+00	2.360E-01	3.727E-02	9.291E-04	2.272E-09	2.104E-25	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	3.138E-03	1.503E-02	4.336E-02	1.297E-01	2.816E-01	3.704E-01	2.222E-01	5.933E-02
Po-210	Ra-226	2.100E-04	6.591E-07	3.157E-06	9.108E-06	2.724E-05	5.914E-05	7.779E-05	4.668E-05	1.246E-05
Po-210	Ra-226	1.998E-04	6.270E-07	3.004E-06	8.665E-06	2.591E-05	5.627E-05	7.401E-05	4.441E-05	1.186E-05
Po-210	Ra-226	4.196E-08	1.317E-10	6.309E-10	1.820E-09	5.443E-09	1.182E-08	1.555E-08	9.328E-09	2.490E-09
Po-210	Ra-226	2.000E-07	6.278E-10	3.007E-09	8.676E-09	2.595E-08	5.634E-08	7.410E-08	4.447E-08	1.187E-08
Po-210	Th-230	9.996E-01	3.640E-07	4.106E-06	2.941E-05	2.973E-04	2.162E-03	1.293E-02	3.844E-02	7.092E-02
Po-210	Th-230	2.100E-04	7.646E-11	8.625E-10	6.178E-09	6.245E-08	4.541E-07	2.716E-06	8.075E-06	1.490E-05
Po-210	Th-230	1.998E-04	7.275E-11	8.206E-10	5.878E-09	5.941E-08	4.321E-07	2.584E-06	7.683E-06	1.417E-05
Po-210	Th-230	4.196E-08	1.528E-14	1.724E-13	1.235E-12	1.248E-11	9.075E-11	5.427E-10	1.614E-09	2.977E-09
Po-210	Th-230	2.000E-07	7.284E-14	8.216E-13	5.885E-12	5.948E-11	4.326E-10	2.587E-09	7.692E-09	1.419E-08
Po-210	U-234	9.996E-01	6.989E-13	1.722E-11	2.870E-10	9.321E-09	2.100E-07	4.513E-06	4.021E-05	2.049E-04
Po-210	U-234	2.100E-04	1.468E-16	3.618E-15	6.027E-14	1.958E-12	4.411E-11	9.479E-10	8.446E-09	4.305E-08
Po-210	U-234	1.998E-04	1.397E-16	3.442E-15	5.734E-14	1.863E-12	4.197E-11	9.018E-10	8.035E-09	4.096E-08
Po-210	U-234	4.196E-08	2.934E-20	7.230E-19	1.204E-17	3.912E-16	8.816E-15	1.894E-13	1.688E-12	8.603E-12
Po-210	U-234	2.000E-07	1.398E-19	3.446E-18	5.741E-17	1.865E-15	4.202E-14	9.029E-13	8.045E-12	4.101E-11
Po-210	U-238	1.599E-03	5.388E-22	2.819E-20	1.051E-18	1.071E-16	7.358E-15	5.538E-13	1.513E-11	2.517E-10
Po-210	U-238	3.359E-07	1.131E-25	5.921E-24	2.207E-22	2.250E-20	1.545E-18	1.163E-16	3.178E-15	5.288E-14
Po-210	U-238	3.196E-07	1.076E-25	5.634E-24	2.100E-22	2.141E-20	1.470E-18	1.107E-16	3.023E-15	5.031E-14

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	2.260E-29	1.183E-27	4.411E-26	4.497E-24	3.088E-22	2.324E-20	6.350E-19	1.057E-17
Po-210	U-238	3.200E-10	1.077E-28	5.641E-27	2.102E-25	2.144E-23	1.472E-21	1.108E-19	3.027E-18	5.037E-17
Po-210	U-238	9.980E-01	3.362E-19	1.759E-17	6.557E-16	6.686E-14	4.591E-12	3.455E-10	9.440E-09	1.571E-07
Po-210	U-238	2.096E-04	7.060E-23	3.695E-21	1.377E-19	1.404E-17	9.644E-16	7.258E-14	1.983E-12	3.299E-11
Po-210	U-238	1.994E-04	6.717E-23	3.515E-21	1.310E-19	1.336E-17	9.175E-16	6.905E-14	1.887E-12	3.139E-11
Po-210	U-238	4.189E-08	1.411E-26	7.384E-25	2.752E-23	2.806E-21	1.927E-19	1.450E-17	3.963E-16	6.594E-15
Po-210	U-238	1.997E-07	6.725E-26	3.520E-24	1.312E-22	1.338E-20	9.186E-19	6.914E-17	1.889E-15	3.143E-14
Po-210	ΣDOSE(j)		5.013E-01	4.967E-01	4.947E-01	4.885E-01	4.695E-01	4.020E-01	2.609E-01	1.305E-01
Pb-210	Pb-210	1.900E-08	1.543E-09	1.493E-09	1.398E-09	1.110E-09	5.752E-10	5.756E-11	8.011E-14	8.183E-24
Pb-210	Ra-226	1.899E-08	2.844E-11	7.638E-11	1.659E-10	4.327E-10	9.015E-10	1.171E-09	7.021E-10	1.042E-10
Pb-210	Ra-226	3.989E-12	5.973E-15	1.604E-14	3.484E-14	9.088E-14	1.894E-13	2.460E-13	1.475E-13	2.190E-14
Pb-210	Ra-226	3.795E-12	5.683E-15	1.526E-14	3.315E-14	8.647E-14	1.802E-13	2.341E-13	1.403E-13	2.083E-14
Pb-210	Ra-226	7.972E-16	1.194E-18	3.206E-18	6.963E-18	1.816E-17	3.784E-17	4.917E-17	2.947E-17	4.376E-18
Pb-210	Ra-226	3.800E-15	5.690E-18	1.528E-17	3.319E-17	8.657E-17	1.804E-16	2.344E-16	1.405E-16	2.086E-17
Pb-210	Th-230	1.899E-08	2.955E-15	2.247E-14	1.211E-13	1.022E-12	6.995E-12	4.095E-11	1.212E-10	2.131E-10
Pb-210	Th-230	3.989E-12	6.206E-19	4.720E-18	2.544E-17	2.148E-16	1.469E-15	8.602E-15	2.546E-14	4.476E-14
Pb-210	Th-230	3.795E-12	5.905E-19	4.491E-18	2.420E-17	2.043E-16	1.398E-15	8.184E-15	2.422E-14	4.259E-14
Pb-210	Th-230	7.972E-16	1.240E-22	9.433E-22	5.084E-21	4.292E-20	2.936E-19	1.719E-18	5.087E-18	8.945E-18
Pb-210	Th-230	3.800E-15	5.912E-22	4.496E-21	2.423E-20	2.046E-19	1.400E-18	8.194E-18	2.425E-17	4.264E-17
Pb-210	U-234	1.899E-08	6.446E-21	1.075E-19	1.305E-18	3.348E-17	6.908E-16	1.437E-14	1.269E-13	5.098E-13
Pb-210	U-234	3.989E-12	1.354E-24	2.257E-23	2.741E-22	7.032E-21	1.451E-19	3.018E-18	2.666E-17	1.071E-16
Pb-210	U-234	3.795E-12	1.288E-24	2.148E-23	2.608E-22	6.690E-21	1.381E-19	2.871E-18	2.537E-17	1.019E-16
Pb-210	U-234	7.972E-16	2.698E-28	4.511E-27	5.478E-26	1.405E-24	2.900E-23	6.031E-22	5.328E-21	2.140E-20
Pb-210	U-234	3.800E-15	1.290E-27	2.150E-26	2.611E-25	6.698E-24	1.382E-22	2.875E-21	2.540E-20	1.020E-19
Pb-210	U-238	3.039E-11	5.534E-30	1.946E-28	5.203E-27	4.008E-25	2.459E-23	1.772E-21	4.784E-20	5.221E-19
Pb-210	U-238	6.383E-15	0.000E+00	0.000E+00	0.000E+00	8.398E-29	5.164E-27	3.722E-25	1.005E-23	1.097E-22
Pb-210	U-238	6.073E-15	0.000E+00	0.000E+00	0.000E+00	7.990E-29	4.913E-27	3.541E-25	9.559E-24	1.043E-22
Pb-210	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.421E-29	2.008E-27	2.192E-26
Pb-210	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.907E-30	3.537E-28	9.571E-27	1.045E-25
Pb-210	U-238	1.896E-08	3.464E-27	1.218E-25	3.247E-24	2.501E-22	1.534E-20	1.106E-18	2.985E-17	3.258E-16
Pb-210	U-238	3.983E-12	0.000E+00	2.551E-29	6.819E-28	5.253E-26	3.223E-24	2.323E-22	6.270E-21	6.844E-20
Pb-210	U-238	3.789E-12	0.000E+00	2.427E-29	6.488E-28	4.998E-26	3.066E-24	2.210E-22	5.965E-21	6.511E-20
Pb-210	U-238	7.959E-16	0.000E+00	0.000E+00	0.000E+00	1.047E-29	6.440E-28	4.642E-26	1.253E-24	1.368E-23
Pb-210	U-238	3.794E-15	0.000E+00	0.000E+00	0.000E+00	4.992E-29	3.070E-27	2.213E-25	5.972E-24	6.519E-23
Pb-210	ΣDOSE(j)		1.571E-09	1.569E-09	1.564E-09	1.544E-09	1.484E-09	1.270E-09	8.239E-10	3.180E-10
Ra-226	Ra-226	9.996E-01	4.255E-01	4.243E-01	4.220E-01	4.138E-01	3.912E-01	3.214E-01	1.833E-01	2.592E-02
Ra-226	Ra-226	1.319E-06	5.617E-07	5.601E-07	5.570E-07	5.462E-07	5.163E-07	4.242E-07	2.420E-07	3.421E-08
Ra-226	Th-230	9.996E-01	9.006E-05	2.738E-04	6.404E-04	1.907E-03	5.393E-03	1.615E-02	3.739E-02	6.130E-02
Ra-226	Th-230	1.319E-06	1.189E-10	3.614E-10	8.453E-10	2.518E-09	7.118E-09	2.132E-08	4.936E-08	8.092E-08
Ra-226	Th-230	1.899E-08	1.711E-12	5.202E-12	1.217E-11	3.624E-11	1.025E-10	3.069E-10	7.105E-10	1.165E-09
Ra-226	U-234	9.996E-01	2.727E-10	1.941E-09	1.031E-08	9.142E-08	7.413E-07	6.996E-06	4.246E-05	1.464E-04
Ra-226	U-234	1.319E-06	3.600E-16	2.562E-15	1.361E-14	1.207E-13	9.786E-13	9.234E-12	5.605E-11	1.933E-10
Ra-226	U-234	1.899E-08	5.182E-18	3.688E-17	1.960E-16	1.737E-15	1.409E-14	1.329E-13	8.068E-13	2.782E-12
Ra-226	U-238	1.599E-03	3.052E-19	4.664E-18	5.483E-17	1.441E-15	3.371E-14	1.024E-12	1.734E-11	1.502E-10
Ra-226	U-238	2.111E-09	4.029E-25	6.157E-24	7.238E-23	1.902E-21	4.449E-20	1.352E-18	2.289E-17	1.983E-16
Ra-226	U-238	3.039E-11	5.799E-27	8.862E-26	1.042E-24	2.738E-23	6.405E-22	1.947E-20	3.295E-19	2.855E-18
Ra-226	U-238	9.980E-01	1.905E-16	2.911E-15	3.422E-14	8.991E-13	2.103E-11	6.393E-10	1.082E-08	9.375E-08

Summary : Recreator_Soil + Game and Fowl

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	2.514E-22	3.842E-21	4.517E-20	1.187E-18	2.776E-17	8.438E-16	1.429E-14	1.238E-13
Ra-226	U-238	1.896E-08	3.619E-24	5.530E-23	6.501E-22	1.708E-20	3.996E-19	1.215E-17	2.056E-16	1.781E-15
Ra-226	ΣDOSE(j)		4.256E-01	4.246E-01	4.226E-01	4.157E-01	3.966E-01	3.375E-01	2.208E-01	8.737E-02
Pb-210	Ra-226	1.319E-06	1.529E-09	3.986E-09	8.548E-09	2.215E-08	4.604E-08	5.978E-08	3.583E-08	5.427E-09
Pb-210	Ra-226	2.771E-10	3.211E-13	8.372E-13	1.795E-12	4.652E-12	9.670E-12	1.256E-11	7.526E-12	1.140E-12
Pb-210	Ra-226	2.637E-10	3.055E-13	7.966E-13	1.708E-12	4.426E-12	9.200E-12	1.195E-11	7.160E-12	1.085E-12
Pb-210	Ra-226	5.538E-14	6.417E-17	1.673E-16	3.588E-16	9.296E-16	1.932E-15	2.509E-15	1.504E-15	2.278E-16
Pb-210	Ra-226	2.640E-13	3.059E-16	7.975E-16	1.710E-15	4.431E-15	9.211E-15	1.196E-14	7.169E-15	1.086E-15
Pb-210	Th-230	1.319E-06	1.404E-13	1.112E-12	6.093E-12	5.187E-11	3.559E-10	2.085E-09	6.173E-09	1.087E-08
Pb-210	Th-230	2.771E-10	2.949E-17	2.335E-16	1.280E-15	1.090E-14	7.475E-14	4.380E-13	1.297E-12	2.283E-12
Pb-210	Th-230	2.637E-10	2.806E-17	2.222E-16	1.218E-15	1.037E-14	7.112E-14	4.168E-13	1.234E-12	2.172E-12
Pb-210	Th-230	5.538E-14	5.894E-21	4.667E-20	2.558E-19	2.177E-18	1.494E-17	8.754E-17	2.591E-16	4.562E-16
Pb-210	Th-230	2.640E-13	2.809E-20	2.225E-19	1.219E-18	1.038E-17	7.121E-17	4.173E-16	1.235E-15	2.174E-15
Pb-210	U-234	1.319E-06	2.985E-19	5.246E-18	6.525E-17	1.695E-15	3.512E-14	7.315E-13	6.465E-12	2.614E-11
Pb-210	U-234	2.771E-10	6.269E-23	1.102E-21	1.371E-20	3.560E-19	7.377E-18	1.537E-16	1.358E-15	5.491E-15
Pb-210	U-234	2.637E-10	5.965E-23	1.048E-21	1.304E-20	3.387E-19	7.018E-18	1.462E-16	1.292E-15	5.224E-15
Pb-210	U-234	5.538E-14	1.253E-26	2.202E-25	2.739E-24	7.115E-23	1.474E-21	3.071E-20	2.714E-19	1.097E-18
Pb-210	U-234	2.640E-13	5.972E-26	1.050E-24	1.306E-23	3.391E-22	7.027E-21	1.464E-19	1.294E-18	5.231E-18
Pb-210	U-238	2.111E-09	2.506E-28	9.403E-27	2.585E-25	2.025E-23	1.249E-21	9.020E-20	2.436E-18	2.695E-17
Pb-210	U-238	4.434E-13	0.000E+00	1.938E-30	5.338E-29	4.253E-27	2.623E-25	1.895E-23	5.117E-22	5.661E-21
Pb-210	U-238	4.219E-13	0.000E+00	1.844E-30	5.079E-29	4.046E-27	2.496E-25	1.803E-23	4.868E-22	5.386E-21
Pb-210	U-238	8.862E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.161E-29	3.786E-27	1.023E-25	1.131E-24
Pb-210	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	3.987E-30	2.491E-28	1.805E-26	4.874E-25	5.393E-24
Pb-210	U-238	1.317E-06	1.564E-25	5.868E-24	1.613E-22	1.264E-20	7.794E-19	5.629E-17	1.520E-15	1.682E-14
Pb-210	U-238	2.767E-10	3.209E-29	1.232E-27	3.388E-26	2.654E-24	1.637E-22	1.182E-20	3.193E-19	3.533E-18
Pb-210	U-238	2.633E-10	3.054E-29	1.173E-27	3.224E-26	2.525E-24	1.558E-22	1.125E-20	3.038E-19	3.361E-18
Pb-210	U-238	5.530E-14	0.000E+00	0.000E+00	6.656E-30	5.303E-28	3.271E-26	2.363E-24	6.381E-23	7.059E-22
Pb-210	U-238	2.636E-13	0.000E+00	1.152E-30	3.173E-29	2.528E-27	1.559E-25	1.126E-23	3.041E-22	3.365E-21
Pb-210	ΣDOSE(j)		1.530E-09	3.989E-09	8.557E-09	2.221E-08	4.641E-08	6.189E-08	4.203E-08	1.633E-08
Ra-226	Ra-226	1.899E-08	8.085E-09	8.062E-09	8.017E-09	7.861E-09	7.432E-09	6.106E-09	3.483E-09	4.924E-10
Ra-226	Ra-226	2.100E-04	2.159E-04	2.153E-04	2.141E-04	2.099E-04	1.985E-04	1.631E-04	9.301E-05	1.308E-05
Ra-226	ΣDOSE(j)		2.159E-04	2.153E-04	2.141E-04	2.099E-04	1.985E-04	1.631E-04	9.301E-05	1.308E-05
Ra-226	Ra-226	2.771E-10	2.850E-10	2.842E-10	2.826E-10	2.771E-10	2.620E-10	2.152E-10	1.228E-10	1.727E-11
Ra-226	Ra-226	3.989E-12	4.102E-12	4.090E-12	4.067E-12	3.988E-12	3.771E-12	3.098E-12	1.767E-12	2.486E-13
Ra-226	ΣDOSE(j)		2.891E-10	2.883E-10	2.866E-10	2.811E-10	2.657E-10	2.183E-10	1.245E-10	1.752E-11
Ra-226	Ra-226	1.998E-04	7.591E-05	7.570E-05	7.527E-05	7.381E-05	6.978E-05	5.733E-05	3.270E-05	4.628E-06
Ra-226	Ra-226	2.637E-10	1.002E-10	9.992E-11	9.936E-11	9.743E-11	9.211E-11	7.568E-11	4.317E-11	6.109E-12
Ra-226	Th-230	1.998E-04	1.602E-08	4.879E-08	1.142E-07	3.402E-07	9.619E-07	2.881E-06	6.671E-06	1.094E-05
Ra-226	Th-230	2.637E-10	2.115E-14	6.440E-14	1.507E-13	4.491E-13	1.270E-12	3.804E-12	8.805E-12	1.444E-11
Ra-226	Th-230	3.795E-12	3.044E-16	9.269E-16	2.170E-15	6.464E-15	1.828E-14	5.475E-14	1.267E-13	2.078E-13
Ra-226	U-234	1.998E-04	4.838E-14	3.453E-13	1.838E-12	1.630E-11	1.322E-10	1.248E-09	7.575E-09	2.613E-08
Ra-226	U-234	2.637E-10	6.386E-20	4.558E-19	2.426E-18	2.152E-17	1.745E-16	1.647E-15	9.999E-15	3.449E-14
Ra-226	U-234	3.795E-12	9.191E-22	6.561E-21	3.491E-20	3.097E-19	2.512E-18	2.371E-17	1.439E-16	4.965E-16
Ra-226	U-238	3.196E-07	5.403E-23	8.288E-22	9.764E-21	2.569E-19	6.012E-18	1.827E-16	3.094E-15	2.682E-14
Ra-226	U-238	4.219E-13	7.130E-29	1.094E-27	1.289E-26	3.391E-25	7.936E-24	2.412E-22	4.084E-21	3.540E-20

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	0.000E+00	1.574E-29	1.855E-28	4.881E-27	1.142E-25	3.472E-24	5.879E-23	5.096E-22
Ra-226	U-238	1.994E-04	3.371E-20	5.172E-19	6.093E-18	1.603E-16	3.751E-15	1.140E-13	1.931E-12	1.673E-11
Ra-226	U-238	2.633E-10	4.450E-26	6.827E-25	8.042E-24	2.116E-22	4.952E-21	1.505E-19	2.548E-18	2.209E-17
Ra-226	U-238	3.789E-12	6.404E-28	9.826E-27	1.158E-25	3.046E-24	7.128E-23	2.167E-21	3.668E-20	3.180E-19
Ra-226	ΣDOSE (j)		7.593E-05	7.575E-05	7.539E-05	7.415E-05	7.074E-05	6.021E-05	3.938E-05	1.559E-05
Ra-226	Ra-226	3.795E-12	1.442E-12	1.438E-12	1.430E-12	1.402E-12	1.326E-12	1.089E-12	6.214E-13	8.793E-14
Ra-226	Ra-226	4.196E-08	4.123E-08	4.111E-08	4.088E-08	4.008E-08	3.790E-08	3.114E-08	1.776E-08	2.499E-09
Ra-226	ΣDOSE (j)		4.123E-08	4.111E-08	4.088E-08	4.009E-08	3.790E-08	3.114E-08	1.776E-08	2.499E-09
Ra-226	Ra-226	5.538E-14	5.442E-14	5.427E-14	5.396E-14	5.291E-14	5.002E-14	4.110E-14	2.344E-14	3.298E-15
Ra-226	Ra-226	7.972E-16	7.833E-16	7.811E-16	7.767E-16	7.616E-16	7.200E-16	5.916E-16	3.375E-16	4.748E-17
Ra-226	ΣDOSE (j)		5.520E-14	5.505E-14	5.474E-14	5.367E-14	5.074E-14	4.169E-14	2.378E-14	3.346E-15
Ra-226	Ra-226	2.000E-07	1.029E-08	1.026E-08	1.020E-08	1.000E-08	9.455E-09	7.768E-09	4.431E-09	6.649E-10
Ra-226	Ra-226	2.640E-13	1.358E-14	1.354E-14	1.346E-14	1.320E-14	1.248E-14	1.025E-14	5.849E-15	8.777E-16
Ra-226	Th-230	2.000E-07	1.799E-12	6.175E-12	1.504E-11	4.566E-11	1.299E-10	3.900E-10	9.034E-10	1.486E-09
Ra-226	Th-230	2.640E-13	2.374E-18	8.151E-18	1.985E-17	6.027E-17	1.715E-16	5.148E-16	1.193E-15	1.962E-15
Ra-226	Th-230	3.800E-15	3.418E-20	1.173E-19	2.857E-19	8.676E-19	2.468E-18	7.410E-18	1.717E-17	2.824E-17
Ra-226	U-234	2.000E-07	4.809E-18	4.091E-17	2.349E-16	2.166E-15	1.780E-14	1.687E-13	1.026E-12	3.606E-12
Ra-226	U-234	2.640E-13	6.348E-24	5.401E-23	3.100E-22	2.859E-21	2.349E-20	2.227E-19	1.354E-18	4.760E-18
Ra-226	U-234	3.800E-15	9.138E-26	7.774E-25	4.463E-24	4.116E-23	3.381E-22	3.206E-21	1.949E-20	6.851E-20
Ra-226	U-238	3.200E-10	4.839E-27	9.256E-26	1.213E-24	3.381E-23	8.065E-22	2.469E-20	4.188E-19	3.771E-18
Ra-226	U-238	4.224E-16	0.000E+00	0.000E+00	1.550E-30	4.455E-29	1.064E-27	3.258E-26	5.528E-25	4.978E-24
Ra-226	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.487E-29	4.682E-28	7.956E-27	7.165E-26
Ra-226	U-238	1.997E-07	3.020E-24	5.776E-23	7.570E-22	2.110E-20	5.032E-19	1.540E-17	2.613E-16	2.353E-15
Ra-226	U-238	2.636E-13	3.803E-30	7.608E-29	9.991E-28	2.785E-26	6.643E-25	2.033E-23	3.449E-22	3.106E-21
Ra-226	U-238	3.794E-15	0.000E+00	1.058E-30	1.392E-29	4.002E-28	9.561E-27	2.927E-25	4.965E-24	4.471E-23
Ra-226	ΣDOSE (j)		1.029E-08	1.026E-08	1.021E-08	1.005E-08	9.585E-09	8.158E-09	5.336E-09	2.155E-09
Ra-226	Ra-226	3.800E-15	1.954E-16	1.949E-16	1.938E-16	1.900E-16	1.796E-16	1.476E-16	8.419E-17	1.263E-17
Th-230	Th-230	9.996E-01	1.992E-03	1.992E-03	1.992E-03	1.991E-03	1.991E-03	1.989E-03	1.984E-03	1.968E-03
Th-230	Th-230	1.319E-06	2.629E-09	2.629E-09	2.629E-09	2.629E-09	2.628E-09	2.626E-09	2.620E-09	2.598E-09
Th-230	U-234	9.996E-01	1.121E-08	2.981E-08	6.612E-08	1.913E-07	5.333E-07	1.566E-06	3.475E-06	5.268E-06
Th-230	U-234	1.319E-06	1.480E-14	3.935E-14	8.728E-14	2.525E-13	7.040E-13	2.067E-12	4.587E-12	6.954E-12
Th-230	U-234	1.899E-08	2.130E-16	5.664E-16	1.256E-15	3.635E-15	1.013E-14	2.975E-14	6.602E-14	1.001E-13
Th-230	U-234	2.100E-04	2.355E-12	6.262E-12	1.389E-11	4.018E-11	1.120E-10	3.288E-10	7.299E-10	1.107E-09
Th-230	U-234	2.771E-10	3.109E-18	8.265E-18	1.833E-17	5.304E-17	1.479E-16	4.341E-16	9.635E-16	1.461E-15
Th-230	U-234	3.989E-12	4.475E-20	1.190E-19	2.639E-19	7.635E-19	2.128E-18	6.248E-18	1.387E-17	2.102E-17
Th-230	U-234	1.998E-04	2.241E-12	5.957E-12	1.321E-11	3.823E-11	1.066E-10	3.129E-10	6.944E-10	1.053E-09
Th-230	U-234	2.637E-10	2.958E-18	7.864E-18	1.744E-17	5.046E-17	1.407E-16	4.130E-16	9.167E-16	1.390E-15
Th-230	U-234	3.795E-12	4.257E-20	1.132E-19	2.511E-19	7.264E-19	2.025E-18	5.944E-18	1.319E-17	2.000E-17
Th-230	U-234	4.196E-08	4.707E-16	1.251E-15	2.775E-15	8.030E-15	2.239E-14	6.572E-14	1.459E-13	2.211E-13
Th-230	U-234	5.538E-14	6.213E-22	1.652E-21	3.663E-21	1.060E-20	2.955E-20	8.674E-20	1.925E-19	2.919E-19
Th-230	U-234	7.972E-16	8.942E-24	2.378E-23	5.273E-23	1.526E-22	4.253E-22	1.249E-21	2.771E-21	4.201E-21
Th-230	U-234	2.000E-07	2.243E-15	5.965E-15	1.323E-14	3.828E-14	1.067E-13	3.132E-13	6.953E-13	1.054E-12
Th-230	U-234	2.640E-13	2.961E-21	7.873E-21	1.746E-20	5.053E-20	1.408E-19	4.135E-19	9.178E-19	1.391E-18
Th-230	U-234	3.800E-15	4.263E-23	1.133E-22	2.514E-22	7.273E-22	2.027E-21	5.952E-21	1.321E-20	2.003E-20

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	1.883E-17	1.122E-16	5.437E-16	4.570E-15	3.628E-14	3.362E-13	1.975E-12	6.294E-12
Th-230	U-238	2.111E-09	2.485E-23	1.481E-22	7.177E-22	6.032E-21	4.789E-20	4.437E-19	2.607E-18	8.308E-18
Th-230	U-238	3.039E-11	3.578E-25	2.131E-24	1.033E-23	8.682E-23	6.893E-22	6.387E-21	3.753E-20	1.196E-19
Th-230	U-238	3.359E-07	3.955E-21	2.356E-20	1.142E-19	9.598E-19	7.620E-18	7.061E-17	4.149E-16	1.322E-15
Th-230	U-238	4.434E-13	5.221E-27	3.110E-26	1.508E-25	1.267E-24	1.006E-23	9.321E-23	5.476E-22	1.745E-21
Th-230	U-238	6.383E-15	7.514E-29	4.477E-28	2.170E-27	1.824E-26	1.448E-25	1.342E-24	7.882E-24	2.512E-23
Th-230	U-238	3.196E-07	3.763E-21	2.242E-20	1.087E-19	9.132E-19	7.250E-18	6.718E-17	3.947E-16	1.258E-15
Th-230	U-238	4.219E-13	4.967E-27	2.959E-26	1.434E-25	1.205E-24	9.570E-24	8.868E-23	5.210E-22	1.660E-21
Th-230	U-238	6.073E-15	7.149E-29	4.260E-28	2.065E-27	1.735E-26	1.377E-25	1.276E-24	7.499E-24	2.390E-23
Th-230	U-238	6.713E-11	7.904E-25	4.709E-24	2.282E-23	1.918E-22	1.523E-21	1.411E-20	8.291E-20	2.642E-19
Th-230	U-238	8.862E-17	0.000E+00	5.771E-30	2.779E-29	2.532E-28	2.010E-27	1.863E-26	1.094E-25	3.487E-25
Th-230	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	3.348E-30	2.654E-29	2.681E-28	1.575E-27	5.019E-27
Th-230	U-238	3.200E-10	3.767E-24	2.245E-23	1.088E-22	9.143E-22	7.259E-21	6.726E-20	3.952E-19	1.259E-18
Th-230	U-238	4.224E-16	4.669E-30	2.751E-29	1.436E-28	1.207E-27	9.582E-27	8.879E-26	5.216E-25	1.662E-24
Th-230	U-238	6.080E-18	0.000E+00	0.000E+00	1.906E-30	1.596E-29	1.379E-28	1.278E-27	7.509E-27	2.393E-26
Th-230	U-238	9.980E-01	1.175E-14	7.000E-14	3.393E-13	2.851E-12	2.264E-11	2.098E-10	1.232E-09	3.927E-09
Th-230	U-238	1.317E-06	1.551E-20	9.240E-20	4.479E-19	3.764E-18	2.988E-17	2.769E-16	1.627E-15	5.184E-15
Th-230	U-238	1.896E-08	2.232E-22	1.330E-21	6.446E-21	5.418E-20	4.301E-19	3.986E-18	2.342E-17	7.462E-17
Th-230	U-238	2.096E-04	2.468E-18	1.470E-17	7.126E-17	5.989E-16	4.755E-15	4.406E-14	2.589E-13	8.249E-13
Th-230	U-238	2.767E-10	3.258E-24	1.941E-23	9.407E-23	7.906E-22	6.277E-21	5.816E-20	3.417E-19	1.089E-18
Th-230	U-238	3.983E-12	4.689E-26	2.794E-25	1.354E-24	1.138E-23	9.034E-23	8.372E-22	4.919E-21	1.567E-20
Th-230	U-238	1.994E-04	2.348E-18	1.399E-17	6.780E-17	5.698E-16	4.524E-15	4.192E-14	2.463E-13	7.849E-13
Th-230	U-238	2.633E-10	3.099E-24	1.847E-23	8.950E-23	7.522E-22	5.972E-21	5.533E-20	3.251E-19	1.036E-18
Th-230	U-238	3.789E-12	4.461E-26	2.658E-25	1.288E-24	1.083E-23	8.596E-23	7.965E-22	4.680E-21	1.491E-20
Th-230	U-238	4.189E-08	4.932E-22	2.938E-21	1.424E-20	1.197E-19	9.502E-19	8.805E-18	5.173E-17	1.649E-16
Th-230	U-238	5.530E-14	6.510E-28	3.879E-27	1.880E-26	1.580E-25	1.254E-24	1.162E-23	6.829E-23	2.176E-22
Th-230	U-238	7.959E-16	8.799E-30	5.485E-29	2.706E-28	2.274E-27	1.805E-26	1.673E-25	9.829E-25	3.132E-24
Th-230	U-238	1.997E-07	2.351E-21	1.401E-20	6.788E-20	5.705E-19	4.529E-18	4.197E-17	2.466E-16	7.858E-16
Th-230	U-238	2.636E-13	3.103E-27	1.849E-26	8.961E-26	7.531E-25	5.979E-24	5.540E-23	3.255E-22	1.037E-21
Th-230	U-238	3.794E-15	4.301E-29	2.661E-28	1.290E-27	1.084E-26	8.606E-26	7.975E-25	4.685E-24	1.493E-23
Th-230	ΣDOSE(j)		1.992E-03	1.992E-03	1.992E-03	1.992E-03	1.991E-03	1.991E-03	1.988E-03	1.973E-03
Th-230	Th-230	1.899E-08	3.784E-11	3.784E-11	3.784E-11	3.784E-11	3.783E-11	3.780E-11	3.771E-11	3.739E-11
Th-230	Th-230	2.100E-04	4.183E-07	4.183E-07	4.183E-07	4.183E-07	4.182E-07	4.178E-07	4.168E-07	4.134E-07
Th-230	ΣDOSE(j)		4.184E-07	4.184E-07	4.184E-07	4.183E-07	4.182E-07	4.179E-07	4.169E-07	4.134E-07
Ra-226	Th-230	2.100E-04	4.633E-08	1.396E-07	3.256E-07	9.684E-07	2.737E-06	8.196E-06	1.897E-05	3.109E-05
Ra-226	Th-230	3.989E-12	8.803E-16	2.653E-15	6.187E-15	1.840E-14	5.200E-14	1.557E-13	3.605E-13	5.908E-13
Ra-226	U-234	2.100E-04	1.412E-13	9.943E-13	5.255E-12	4.645E-11	3.763E-10	3.550E-09	2.154E-08	7.418E-08
Ra-226	U-234	2.771E-10	1.864E-19	1.312E-18	6.937E-18	6.131E-17	4.967E-16	4.686E-15	2.844E-14	9.792E-14
Ra-226	U-234	3.989E-12	2.683E-21	1.889E-20	9.985E-20	8.825E-19	7.150E-18	6.744E-17	4.093E-16	1.409E-15
Ra-226	U-238	3.359E-07	1.588E-22	2.398E-21	2.800E-20	7.326E-19	1.711E-17	5.199E-16	8.800E-15	7.599E-14
Ra-226	U-238	4.434E-13	2.096E-28	3.165E-27	3.695E-26	9.671E-25	2.259E-23	6.862E-22	1.162E-20	1.003E-19
Ra-226	U-238	6.383E-15	2.924E-30	4.556E-29	5.319E-28	1.392E-26	3.252E-25	9.878E-24	1.672E-22	1.444E-21
Ra-226	U-238	2.096E-04	9.908E-20	1.496E-18	1.747E-17	4.572E-16	1.068E-14	3.244E-13	5.491E-12	4.742E-11
Ra-226	U-238	2.767E-10	1.308E-25	1.975E-24	2.306E-23	6.035E-22	1.410E-20	4.282E-19	7.249E-18	6.259E-17
Ra-226	U-238	3.983E-12	1.882E-27	2.843E-26	3.319E-25	8.686E-24	2.029E-22	6.164E-21	1.043E-19	9.009E-19
Ra-226	ΣDOSE(j)		4.633E-08	1.396E-07	3.257E-07	9.685E-07	2.737E-06	8.199E-06	1.899E-05	3.117E-05

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	5.522E-13	5.522E-13	5.522E-13	5.521E-13	5.520E-13	5.515E-13	5.502E-13	5.456E-13
Th-230	Th-230	3.989E-12	7.948E-15	7.948E-15	7.948E-15	7.947E-15	7.945E-15	7.939E-15	7.920E-15	7.854E-15
Th-230	ΣDOSE(j)		5.601E-13	5.601E-13	5.601E-13	5.601E-13	5.599E-13	5.595E-13	5.581E-13	5.535E-13
Ra-226	Th-230	2.771E-10	6.116E-14	1.843E-13	4.299E-13	1.278E-12	3.612E-12	1.082E-11	2.504E-11	4.104E-11
Th-230	Th-230	1.998E-04	3.980E-07	3.980E-07	3.980E-07	3.980E-07	3.979E-07	3.975E-07	3.966E-07	3.933E-07
Th-230	Th-230	2.637E-10	5.254E-13	5.254E-13	5.254E-13	5.253E-13	5.252E-13	5.247E-13	5.235E-13	5.191E-13
Th-230	ΣDOSE(j)		3.980E-07	3.980E-07	3.980E-07	3.980E-07	3.979E-07	3.975E-07	3.966E-07	3.933E-07
Th-230	Th-230	3.795E-12	7.562E-15	7.562E-15	7.562E-15	7.561E-15	7.559E-15	7.553E-15	7.535E-15	7.472E-15
Th-230	Th-230	4.196E-08	8.360E-11	8.360E-11	8.360E-11	8.359E-11	8.357E-11	8.350E-11	8.330E-11	8.260E-11
Th-230	ΣDOSE(j)		8.361E-11	8.361E-11	8.360E-11	8.360E-11	8.358E-11	8.351E-11	8.331E-11	8.261E-11
Ra-226	Th-230	4.196E-08	8.844E-12	2.666E-11	6.218E-11	1.849E-10	5.226E-10	1.565E-09	3.623E-09	5.938E-09
Ra-226	Th-230	7.972E-16	1.680E-19	5.066E-19	1.181E-18	3.514E-18	9.929E-18	2.974E-17	6.884E-17	1.128E-16
Ra-226	U-234	4.196E-08	2.694E-17	1.898E-16	1.003E-15	8.869E-15	7.186E-14	6.778E-13	4.114E-12	1.417E-11
Ra-226	U-234	5.538E-14	3.557E-23	2.505E-22	1.324E-21	1.171E-20	9.485E-20	8.948E-19	5.431E-18	1.870E-17
Ra-226	U-234	7.972E-16	5.119E-25	3.606E-24	1.906E-23	1.685E-22	1.365E-21	1.288E-20	7.817E-20	2.691E-19
Ra-226	U-238	6.713E-11	3.029E-26	4.577E-25	5.345E-24	1.399E-22	3.268E-21	9.927E-20	1.680E-18	1.451E-17
Ra-226	U-238	8.862E-17	0.000E+00	0.000E+00	6.729E-30	1.846E-28	4.313E-27	1.310E-25	2.218E-24	1.916E-23
Ra-226	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	2.527E-30	6.209E-29	1.886E-27	3.193E-26	2.757E-25
Ra-226	U-238	4.189E-08	1.890E-23	2.856E-22	3.335E-21	8.729E-20	2.039E-18	6.195E-17	1.049E-15	9.055E-15
Ra-226	U-238	5.530E-14	2.415E-29	3.770E-28	4.402E-27	1.152E-25	2.692E-24	8.177E-23	1.384E-21	1.195E-20
Ra-226	U-238	7.959E-16	0.000E+00	5.204E-30	6.336E-29	1.658E-27	3.875E-26	1.177E-24	1.992E-23	1.721E-22
Ra-226	ΣDOSE(j)		8.844E-12	2.666E-11	6.218E-11	1.849E-10	5.227E-10	1.566E-09	3.627E-09	5.952E-09
Th-230	Th-230	5.538E-14	1.104E-16	1.104E-16	1.103E-16	1.103E-16	1.103E-16	1.102E-16	1.100E-16	1.090E-16
Th-230	Th-230	7.972E-16	1.588E-18	1.588E-18	1.588E-18	1.588E-18	1.588E-18	1.586E-18	1.583E-18	1.569E-18
Th-230	ΣDOSE(j)		1.119E-16	1.119E-16	1.119E-16	1.119E-16	1.119E-16	1.118E-16	1.115E-16	1.106E-16
Ra-226	Th-230	5.538E-14	1.167E-17	3.519E-17	8.208E-17	2.441E-16	6.898E-16	2.066E-15	4.782E-15	7.838E-15
Th-230	Th-230	2.000E-07	3.985E-10	3.985E-10	3.985E-10	3.984E-10	3.983E-10	3.980E-10	3.971E-10	3.937E-10
Th-230	Th-230	2.640E-13	5.260E-16	5.260E-16	5.260E-16	5.259E-16	5.258E-16	5.254E-16	5.241E-16	5.197E-16
Th-230	ΣDOSE(j)		3.985E-10	3.985E-10	3.985E-10	3.984E-10	3.983E-10	3.980E-10	3.971E-10	3.937E-10
Th-230	Th-230	3.800E-15	7.571E-18	7.571E-18	7.571E-18	7.570E-18	7.569E-18	7.562E-18	7.544E-18	7.481E-18
U-234	U-234	9.996E-01	1.525E-03	1.520E-03	1.510E-03	1.475E-03	1.380E-03	1.094E-03	5.628E-04	9.106E-05
U-234	U-234	1.319E-06	2.013E-09	2.006E-09	1.993E-09	1.947E-09	1.822E-09	1.444E-09	7.429E-10	1.202E-10
U-234	U-238	1.599E-03	3.442E-12	1.030E-11	2.387E-11	6.996E-11	1.902E-10	4.966E-10	7.644E-10	4.121E-10
U-234	U-238	2.111E-09	4.543E-18	1.359E-17	3.150E-17	9.235E-17	2.510E-16	6.556E-16	1.009E-15	5.440E-16
U-234	U-238	3.039E-11	6.540E-20	1.956E-19	4.535E-19	1.329E-18	3.613E-18	9.436E-18	1.452E-17	7.831E-18
U-234	U-238	3.359E-07	7.230E-16	2.163E-15	5.013E-15	1.469E-14	3.994E-14	1.043E-13	1.606E-13	8.657E-14
U-234	U-238	4.434E-13	9.543E-22	2.855E-21	6.617E-21	1.940E-20	5.272E-20	1.377E-19	2.119E-19	1.143E-19
U-234	U-238	6.383E-15	1.374E-23	4.109E-23	9.525E-23	2.792E-22	7.589E-22	1.982E-21	3.050E-21	1.645E-21
U-234	U-238	3.196E-07	6.879E-16	2.057E-15	4.770E-15	1.398E-14	3.800E-14	9.925E-14	1.528E-13	8.236E-14
U-234	U-238	4.219E-13	9.080E-22	2.716E-21	6.296E-21	1.845E-20	5.016E-20	1.310E-19	2.016E-19	1.087E-19

Summary : Recreator_Soil + Game and Fowl

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	1.307E-23	3.909E-23	9.062E-23	2.656E-22	7.220E-22	1.886E-21	2.902E-21	1.565E-21
U-234	U-238	6.713E-11	1.445E-19	4.322E-19	1.002E-18	2.937E-18	7.982E-18	2.085E-17	3.208E-17	1.730E-17
U-234	U-238	8.862E-17	1.907E-25	5.705E-25	1.322E-24	3.876E-24	1.054E-23	2.752E-23	4.235E-23	2.284E-23
U-234	U-238	1.276E-18	2.745E-27	8.211E-27	1.903E-26	5.579E-26	1.517E-25	3.961E-25	6.096E-25	3.287E-25
U-234	U-238	3.200E-10	6.887E-19	2.060E-18	4.775E-18	1.400E-17	3.805E-17	9.937E-17	1.529E-16	8.246E-17
U-234	U-238	4.224E-16	9.091E-25	2.719E-24	6.303E-24	1.848E-23	5.022E-23	1.312E-22	2.019E-22	1.089E-22
U-234	U-238	6.080E-18	1.309E-26	3.914E-26	9.073E-26	2.660E-25	7.229E-25	1.888E-24	2.906E-24	1.567E-24
U-234	U-238	9.980E-01	2.148E-09	6.425E-09	1.489E-08	4.365E-08	1.187E-07	3.099E-07	4.770E-07	2.572E-07
U-234	U-238	1.317E-06	2.835E-15	8.480E-15	1.966E-14	5.762E-14	1.566E-13	4.091E-13	6.296E-13	3.395E-13
U-234	U-238	1.896E-08	4.081E-17	1.221E-16	2.830E-16	8.294E-16	2.255E-15	5.888E-15	9.062E-15	4.886E-15
U-234	U-238	2.096E-04	4.511E-13	1.349E-12	3.128E-12	9.169E-12	2.492E-11	6.509E-11	1.002E-10	5.402E-11
U-234	U-238	2.767E-10	5.955E-19	1.781E-18	4.129E-18	1.210E-17	3.290E-17	8.592E-17	1.322E-16	7.130E-17
U-234	U-238	3.983E-12	8.572E-21	2.564E-20	5.944E-20	1.742E-19	4.736E-19	1.237E-18	1.903E-18	1.026E-18
U-234	U-238	1.994E-04	4.292E-13	1.284E-12	2.976E-12	8.724E-12	2.371E-11	6.193E-11	9.532E-11	5.139E-11
U-234	U-238	2.633E-10	5.666E-19	1.695E-18	3.929E-18	1.152E-17	3.130E-17	8.175E-17	1.258E-16	6.784E-17
U-234	U-238	3.789E-12	8.155E-21	2.439E-20	5.655E-20	1.658E-19	4.505E-19	1.177E-18	1.811E-18	9.765E-19
U-234	U-238	4.189E-08	9.016E-17	2.697E-16	6.251E-16	1.832E-15	4.981E-15	1.301E-14	2.002E-14	1.080E-14
U-234	U-238	5.530E-14	1.190E-22	3.560E-22	8.252E-22	2.419E-21	6.575E-21	1.717E-20	2.643E-20	1.425E-20
U-234	U-238	7.959E-16	1.713E-24	5.124E-24	1.188E-23	3.482E-23	9.463E-23	2.472E-22	3.804E-22	2.051E-22
U-234	U-238	1.997E-07	4.297E-16	1.285E-15	2.980E-15	8.734E-15	2.374E-14	6.201E-14	9.543E-14	5.146E-14
U-234	U-238	2.636E-13	5.673E-22	1.697E-21	3.933E-21	1.153E-20	3.134E-20	8.185E-20	1.260E-19	6.792E-20
U-234	U-238	3.794E-15	8.165E-24	2.442E-23	5.662E-23	1.660E-22	4.511E-22	1.178E-21	1.813E-21	9.777E-22
U-234	ΣDOSE(j)		1.525E-03	1.520E-03	1.510E-03	1.475E-03	1.380E-03	1.094E-03	5.633E-04	9.132E-05
U-234	U-234	1.899E-08	2.897E-11	2.887E-11	2.868E-11	2.802E-11	2.622E-11	2.078E-11	1.069E-11	1.730E-12
U-234	U-234	2.100E-04	3.203E-07	3.192E-07	3.171E-07	3.098E-07	2.899E-07	2.297E-07	1.182E-07	1.913E-08
U-234	ΣDOSE(j)		3.203E-07	3.192E-07	3.171E-07	3.098E-07	2.899E-07	2.298E-07	1.182E-07	1.913E-08
U-234	U-234	2.771E-10	4.227E-13	4.213E-13	4.186E-13	4.089E-13	3.826E-13	3.033E-13	1.561E-13	2.525E-14
U-234	U-234	3.989E-12	6.085E-15	6.065E-15	6.025E-15	5.886E-15	5.508E-15	4.365E-15	2.246E-15	3.634E-16
U-234	ΣDOSE(j)		4.288E-13	4.274E-13	4.246E-13	4.148E-13	3.882E-13	3.076E-13	1.583E-13	2.561E-14
U-234	U-234	1.998E-04	3.047E-07	3.037E-07	3.017E-07	2.947E-07	2.758E-07	2.186E-07	1.125E-07	1.820E-08
U-234	U-234	2.637E-10	4.022E-13	4.009E-13	3.982E-13	3.891E-13	3.641E-13	2.885E-13	1.485E-13	2.402E-14
U-234	ΣDOSE(j)		3.047E-07	3.037E-07	3.017E-07	2.947E-07	2.758E-07	2.186E-07	1.125E-07	1.820E-08
U-234	U-234	3.795E-12	5.789E-15	5.770E-15	5.732E-15	5.600E-15	5.240E-15	4.153E-15	2.137E-15	3.458E-16
U-234	U-234	4.196E-08	6.400E-11	6.379E-11	6.337E-11	6.191E-11	5.793E-11	4.591E-11	2.363E-11	3.822E-12
U-234	ΣDOSE(j)		6.400E-11	6.379E-11	6.337E-11	6.192E-11	5.794E-11	4.591E-11	2.363E-11	3.823E-12
U-234	U-234	5.538E-14	8.448E-17	8.420E-17	8.364E-17	8.172E-17	7.647E-17	6.060E-17	3.119E-17	5.045E-18
U-234	U-234	7.972E-16	1.216E-18	1.212E-18	1.204E-18	1.176E-18	1.101E-18	8.723E-19	4.489E-19	7.262E-20
U-234	ΣDOSE(j)		8.569E-17	8.541E-17	8.485E-17	8.290E-17	7.757E-17	6.147E-17	3.163E-17	5.118E-18
U-234	U-234	2.000E-07	3.051E-10	3.041E-10	3.020E-10	2.951E-10	2.761E-10	2.188E-10	1.126E-10	1.822E-11
U-234	U-234	2.640E-13	4.027E-16	4.014E-16	3.987E-16	3.895E-16	3.645E-16	2.889E-16	1.486E-16	2.405E-17
U-234	ΣDOSE(j)		3.051E-10	3.041E-10	3.020E-10	2.951E-10	2.761E-10	2.188E-10	1.126E-10	1.822E-11
U-234	U-234	3.800E-15	5.796E-18	5.777E-18	5.739E-18	5.607E-18	5.247E-18	4.158E-18	2.140E-18	3.462E-19

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	7.464E-10	7.439E-10	7.390E-10	7.220E-10	6.757E-10	5.356E-10	2.758E-10	4.478E-11
U-238	U-238	1.599E-03	4.857E-04	4.841E-04	4.809E-04	4.699E-04	4.397E-04	3.485E-04	1.795E-04	1.763E-05
U-238	ΣDOSE(j)		4.857E-04	4.841E-04	4.809E-04	4.699E-04	4.397E-04	3.485E-04	1.795E-04	1.763E-05
U-238	U-238	2.111E-09	6.412E-10	6.391E-10	6.348E-10	6.202E-10	5.804E-10	4.601E-10	2.369E-10	2.328E-11
U-238	U-238	3.039E-11	9.229E-12	9.199E-12	9.138E-12	8.928E-12	8.354E-12	6.622E-12	3.410E-12	3.350E-13
U-238	ΣDOSE(j)		6.504E-10	6.483E-10	6.440E-10	6.292E-10	5.888E-10	4.667E-10	2.403E-10	2.361E-11
U-238	U-238	3.359E-07	1.020E-07	1.017E-07	1.010E-07	9.870E-08	9.236E-08	7.321E-08	3.769E-08	3.704E-09
U-238	U-238	4.434E-13	1.347E-13	1.342E-13	1.333E-13	1.303E-13	1.219E-13	9.664E-14	4.976E-14	4.889E-15
U-238	ΣDOSE(j)		1.020E-07	1.017E-07	1.010E-07	9.870E-08	9.236E-08	7.321E-08	3.769E-08	3.704E-09
U-238	U-238	6.383E-15	1.939E-15	1.932E-15	1.919E-15	1.875E-15	1.755E-15	1.391E-15	7.162E-16	7.037E-17
U-238	U-238	3.196E-07	9.707E-08	9.675E-08	9.611E-08	9.390E-08	8.787E-08	6.965E-08	3.586E-08	3.524E-09
U-238	ΣDOSE(j)		9.707E-08	9.675E-08	9.611E-08	9.390E-08	8.787E-08	6.965E-08	3.586E-08	3.524E-09
U-238	U-238	4.219E-13	1.281E-13	1.277E-13	1.269E-13	1.240E-13	1.160E-13	9.194E-14	4.734E-14	4.651E-15
U-238	U-238	6.073E-15	1.844E-15	1.838E-15	1.826E-15	1.784E-15	1.670E-15	1.323E-15	6.814E-16	6.695E-17
U-238	ΣDOSE(j)		1.300E-13	1.295E-13	1.287E-13	1.257E-13	1.177E-13	9.327E-14	4.802E-14	4.718E-15
U-238	U-238	6.713E-11	2.039E-11	2.032E-11	2.019E-11	1.972E-11	1.846E-11	1.463E-11	7.533E-12	7.401E-13
U-238	U-238	8.862E-17	2.691E-17	2.682E-17	2.665E-17	2.604E-17	2.436E-17	1.931E-17	9.943E-18	9.770E-19
U-238	ΣDOSE(j)		2.039E-11	2.032E-11	2.019E-11	1.972E-11	1.846E-11	1.463E-11	7.533E-12	7.401E-13
U-238	U-238	1.276E-18	3.874E-19	3.861E-19	3.836E-19	3.747E-19	3.507E-19	2.780E-19	1.431E-19	1.406E-20
U-238	U-238	3.200E-10	9.719E-11	9.687E-11	9.623E-11	9.402E-11	8.798E-11	6.974E-11	3.591E-11	3.528E-12
U-238	ΣDOSE(j)		9.719E-11	9.687E-11	9.623E-11	9.402E-11	8.798E-11	6.974E-11	3.591E-11	3.528E-12
U-238	U-238	4.224E-16	1.283E-16	1.279E-16	1.270E-16	1.241E-16	1.161E-16	9.205E-17	4.740E-17	4.657E-18
U-238	U-238	6.080E-18	1.847E-18	1.840E-18	1.828E-18	1.786E-18	1.672E-18	1.325E-18	6.822E-19	6.703E-20
U-238	ΣDOSE(j)		1.301E-16	1.297E-16	1.288E-16	1.259E-16	1.178E-16	9.338E-17	4.808E-17	4.724E-18
U-238	U-238	9.980E-01	6.828E-03	6.806E-03	6.761E-03	6.605E-03	6.181E-03	4.900E-03	2.523E-03	2.821E-04
U-238	U-238	1.317E-06	9.013E-09	8.984E-09	8.924E-09	8.719E-09	8.159E-09	6.468E-09	3.330E-09	3.723E-10
U-238	ΣDOSE(j)		6.828E-03	6.806E-03	6.761E-03	6.605E-03	6.181E-03	4.900E-03	2.523E-03	2.821E-04
U-238	U-238	1.896E-08	1.297E-10	1.293E-10	1.285E-10	1.255E-10	1.174E-10	9.309E-11	4.793E-11	5.360E-12
U-238	U-238	2.096E-04	1.434E-06	1.429E-06	1.420E-06	1.387E-06	1.298E-06	1.029E-06	5.299E-07	5.925E-08
U-238	ΣDOSE(j)		1.434E-06	1.430E-06	1.420E-06	1.388E-06	1.298E-06	1.029E-06	5.299E-07	5.925E-08
U-238	U-238	2.767E-10	1.893E-12	1.887E-12	1.874E-12	1.831E-12	1.714E-12	1.358E-12	6.994E-13	7.821E-14
U-238	U-238	3.983E-12	2.725E-14	2.716E-14	2.698E-14	2.636E-14	2.467E-14	1.955E-14	1.007E-14	1.126E-15
U-238	ΣDOSE(j)		1.920E-12	1.914E-12	1.901E-12	1.858E-12	1.738E-12	1.378E-12	7.095E-13	7.934E-14
U-238	U-238	1.994E-04	1.365E-06	1.360E-06	1.351E-06	1.320E-06	1.235E-06	9.791E-07	5.041E-07	5.637E-08
U-238	U-238	2.633E-10	1.801E-12	1.795E-12	1.783E-12	1.742E-12	1.631E-12	1.292E-12	6.655E-13	7.441E-14
U-238	ΣDOSE(j)		1.365E-06	1.360E-06	1.351E-06	1.320E-06	1.235E-06	9.791E-07	5.041E-07	5.637E-08
U-238	U-238	3.789E-12	2.593E-14	2.584E-14	2.567E-14	2.508E-14	2.347E-14	1.860E-14	9.579E-15	1.071E-15

Summary : Recreator_Soil + Game and Fowl

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	2.866E-10	2.857E-10	2.838E-10	2.773E-10	2.595E-10	2.057E-10	1.059E-10	1.184E-11
U-238	ΣDOSE(j)		2.866E-10	2.857E-10	2.838E-10	2.773E-10	2.595E-10	2.057E-10	1.059E-10	1.184E-11
U-238	U-238	5.530E-14	3.783E-16	3.771E-16	3.746E-16	3.660E-16	3.425E-16	2.715E-16	1.398E-16	1.563E-17
U-238	U-238	7.959E-16	5.446E-18	5.428E-18	5.392E-18	5.268E-18	4.930E-18	3.908E-18	2.012E-18	2.250E-19
U-238	ΣDOSE(j)		3.838E-16	3.825E-16	3.800E-16	3.713E-16	3.474E-16	2.754E-16	1.418E-16	1.585E-17
U-238	U-238	1.997E-07	1.366E-09	1.362E-09	1.353E-09	1.322E-09	1.237E-09	9.803E-10	5.048E-10	5.644E-11
U-238	U-238	2.636E-13	1.803E-15	1.797E-15	1.786E-15	1.745E-15	1.632E-15	1.294E-15	6.663E-16	7.450E-17
U-238	ΣDOSE(j)		1.366E-09	1.362E-09	1.353E-09	1.322E-09	1.237E-09	9.803E-10	5.048E-10	5.644E-11
U-238	U-238	3.794E-15	2.596E-17	2.587E-17	2.570E-17	2.511E-17	2.350E-17	1.863E-17	9.590E-18	1.072E-18

THF(i) is the thread fraction of the parent nuclide.

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	1.000E+00	9.676E-01	9.061E-01	7.197E-01	3.728E-01	3.731E-02	5.192E-05	5.222E-15
Pb-210	Pb-210	1.320E-06	1.320E-06	1.277E-06	1.196E-06	9.501E-07	4.922E-07	4.924E-08	6.854E-11	6.893E-21
Pb-210	Ra-226	9.996E-01	0.000E+00	3.066E-02	8.878E-02	2.621E-01	5.669E-01	7.450E-01	4.470E-01	6.266E-02
Pb-210	Ra-226	2.100E-04	0.000E+00	6.440E-06	1.865E-05	5.505E-05	1.191E-04	1.565E-04	9.388E-05	1.316E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	6.127E-06	1.774E-05	5.237E-05	1.133E-04	1.489E-04	8.932E-05	1.252E-05
Pb-210	Ra-226	4.196E-08	0.000E+00	1.287E-09	3.727E-09	1.100E-08	2.380E-08	3.127E-08	1.876E-08	2.630E-09
Pb-210	Ra-226	2.000E-07	0.000E+00	6.134E-09	1.776E-08	5.244E-08	1.134E-07	1.491E-07	8.943E-08	1.254E-08
Pb-210	Th-230	9.996E-01	0.000E+00	6.681E-06	5.872E-05	6.018E-04	4.360E-03	2.602E-02	7.734E-02	1.357E-01
Pb-210	Th-230	2.100E-04	0.000E+00	1.403E-09	1.233E-08	1.264E-07	9.158E-07	5.466E-06	1.624E-05	2.850E-05
Pb-210	Th-230	1.998E-04	0.000E+00	1.335E-09	1.174E-08	1.203E-07	8.713E-07	5.200E-06	1.546E-05	2.712E-05
Pb-210	Th-230	4.196E-08	0.000E+00	2.804E-13	2.465E-12	2.526E-11	1.830E-10	1.092E-09	3.246E-09	5.696E-09
Pb-210	Th-230	2.000E-07	0.000E+00	1.337E-12	1.175E-11	1.204E-10	8.724E-10	5.206E-09	1.547E-08	2.715E-08
Pb-210	U-234	9.996E-01	0.000E+00	2.052E-11	5.434E-10	1.883E-08	4.240E-07	9.087E-06	8.090E-05	3.195E-04
Pb-210	U-234	2.100E-04	0.000E+00	4.310E-15	1.141E-13	3.955E-12	8.905E-11	1.909E-09	1.699E-08	6.712E-08
Pb-210	U-234	1.998E-04	0.000E+00	4.101E-15	1.086E-13	3.763E-12	8.473E-11	1.816E-09	1.617E-08	6.386E-08
Pb-210	U-234	4.196E-08	0.000E+00	8.614E-19	2.281E-17	7.903E-16	1.780E-14	3.814E-13	3.396E-12	1.341E-11
Pb-210	U-234	2.000E-07	0.000E+00	4.106E-18	1.087E-16	3.767E-15	8.483E-14	1.818E-12	1.619E-11	6.394E-11
Pb-210	U-238	1.599E-03	0.000E+00	2.320E-20	1.848E-18	2.153E-16	1.486E-14	1.116E-12	3.044E-11	3.212E-10
Pb-210	U-238	3.359E-07	0.000E+00	4.874E-24	3.882E-22	4.522E-20	3.121E-18	2.343E-16	6.394E-15	6.746E-14
Pb-210	U-238	3.196E-07	0.000E+00	4.637E-24	3.693E-22	4.302E-20	2.970E-18	2.229E-16	6.084E-15	6.419E-14
Pb-210	U-238	6.713E-11	0.000E+00	9.740E-28	7.758E-26	9.036E-24	6.238E-22	4.683E-20	1.278E-18	1.348E-17
Pb-210	U-238	3.200E-10	0.000E+00	4.643E-27	3.698E-25	4.307E-23	2.973E-21	2.232E-19	6.091E-18	6.426E-17
Pb-210	U-238	9.980E-01	0.000E+00	1.448E-17	1.153E-15	1.343E-13	9.273E-12	6.961E-10	1.900E-08	2.004E-07
Pb-210	U-238	2.096E-04	0.000E+00	3.041E-21	2.422E-19	2.822E-17	1.948E-15	1.462E-13	3.990E-12	4.210E-11
Pb-210	U-238	1.994E-04	0.000E+00	2.894E-21	2.305E-19	2.685E-17	1.853E-15	1.391E-13	3.796E-12	4.005E-11
Pb-210	U-238	4.189E-08	0.000E+00	6.078E-25	4.841E-23	5.639E-21	3.893E-19	2.922E-17	7.974E-16	8.413E-15
Pb-210	U-238	1.997E-07	0.000E+00	2.897E-24	2.308E-22	2.688E-20	1.855E-18	1.393E-16	3.801E-15	4.010E-14
Pb-210	ΣS(j):		1.000E+00	9.983E-01	9.949E-01	9.825E-01	9.444E-01	8.086E-01	5.246E-01	1.988E-01
Po-210	Pb-210	1.000E+00	0.000E+00	8.172E-01	9.104E-01	7.263E-01	3.763E-01	3.765E-02	5.240E-05	5.269E-15
Po-210	Po-210	1.000E+00	1.000E+00	1.579E-01	3.935E-03	9.623E-09	8.911E-25	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	0.000E+00	1.660E-02	7.271E-02	2.479E-01	5.564E-01	7.389E-01	4.437E-01	6.220E-02
Po-210	Ra-226	2.100E-04	0.000E+00	3.486E-06	1.527E-05	5.206E-05	1.169E-04	1.552E-04	9.319E-05	1.307E-05
Po-210	Ra-226	1.998E-04	0.000E+00	3.317E-06	1.453E-05	4.953E-05	1.112E-04	1.477E-04	8.867E-05	1.243E-05
Po-210	Ra-226	4.196E-08	0.000E+00	6.967E-10	3.052E-09	1.040E-08	2.336E-08	3.101E-08	1.862E-08	2.611E-09
Po-210	Ra-226	2.000E-07	0.000E+00	3.321E-09	1.455E-08	4.959E-08	1.113E-07	1.478E-07	8.877E-08	1.245E-08
Po-210	Th-230	9.996E-01	0.000E+00	2.726E-06	4.114E-05	5.383E-04	4.191E-03	2.562E-02	7.655E-02	1.345E-01
Po-210	Th-230	2.100E-04	0.000E+00	5.727E-10	8.641E-09	1.131E-07	8.803E-07	5.381E-06	1.608E-05	2.825E-05
Po-210	Th-230	1.998E-04	0.000E+00	5.448E-10	8.221E-09	1.076E-07	8.375E-07	5.120E-06	1.530E-05	2.687E-05
Po-210	Th-230	4.196E-08	0.000E+00	1.144E-13	1.727E-12	2.260E-11	1.759E-10	1.075E-09	3.213E-09	5.645E-09
Po-210	Th-230	2.000E-07	0.000E+00	5.455E-13	8.231E-12	1.077E-10	8.386E-10	5.126E-09	1.532E-08	2.691E-08
Po-210	U-234	9.996E-01	0.000E+00	6.770E-12	3.343E-10	1.601E-08	4.001E-07	8.895E-06	7.995E-05	3.166E-04
Po-210	U-234	2.100E-04	0.000E+00	1.422E-15	7.021E-14	3.363E-12	8.403E-11	1.868E-09	1.679E-08	6.650E-08
Po-210	U-234	1.998E-04	0.000E+00	1.353E-15	6.680E-14	3.199E-12	7.995E-11	1.778E-09	1.598E-08	6.327E-08
Po-210	U-234	4.196E-08	0.000E+00	2.842E-19	1.403E-17	6.720E-16	1.679E-14	3.734E-13	3.356E-12	1.329E-11
Po-210	U-234	2.000E-07	0.000E+00	1.355E-18	6.688E-17	3.203E-15	8.005E-14	1.780E-12	1.600E-11	6.335E-11
Po-210	U-238	1.599E-03	0.000E+00	6.444E-21	1.016E-18	1.745E-16	1.378E-14	1.086E-12	3.003E-11	3.181E-10
Po-210	U-238	3.359E-07	0.000E+00	1.353E-24	2.133E-22	3.666E-20	2.893E-18	2.281E-16	6.308E-15	6.682E-14
Po-210	U-238	3.196E-07	0.000E+00	1.288E-24	2.030E-22	3.487E-20	2.753E-18	2.170E-16	6.002E-15	6.358E-14

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	0.000E+00	2.705E-28	4.263E-26	7.325E-24	5.782E-22	4.558E-20	1.261E-18	1.335E-17
Po-210	U-238	3.200E-10	0.000E+00	1.289E-27	2.032E-25	3.492E-23	2.756E-21	2.173E-19	6.009E-18	6.366E-17
Po-210	U-238	9.980E-01	0.000E+00	4.021E-18	6.337E-16	1.089E-13	8.596E-12	6.776E-10	1.874E-08	1.985E-07
Po-210	U-238	2.096E-04	0.000E+00	8.445E-22	1.331E-19	2.287E-17	1.806E-15	1.423E-13	3.936E-12	4.170E-11
Po-210	U-238	1.994E-04	0.000E+00	8.035E-22	1.266E-19	2.176E-17	1.718E-15	1.354E-13	3.745E-12	3.967E-11
Po-210	U-238	4.189E-08	0.000E+00	1.688E-25	2.660E-23	4.571E-21	3.608E-19	2.844E-17	7.866E-16	8.333E-15
Po-210	U-238	1.997E-07	0.000E+00	8.045E-25	1.268E-22	2.179E-20	1.720E-18	1.356E-16	3.750E-15	3.972E-14
Po-210	ΣS(j):		1.000E+00	9.917E-01	9.871E-01	9.748E-01	9.371E-01	8.024E-01	5.206E-01	1.971E-01
Pb-210	Pb-210	1.900E-08	1.900E-08	1.839E-08	1.722E-08	1.368E-08	7.084E-09	7.088E-10	9.865E-13	9.921E-23
Pb-210	Ra-226	1.899E-08	0.000E+00	5.825E-10	1.687E-09	4.979E-09	1.077E-08	1.415E-08	8.492E-09	1.191E-09
Pb-210	Ra-226	3.989E-12	0.000E+00	1.224E-13	3.543E-13	1.046E-12	2.263E-12	2.973E-12	1.784E-12	2.501E-13
Pb-210	Ra-226	3.795E-12	0.000E+00	1.164E-13	3.371E-13	9.951E-13	2.153E-12	2.829E-12	1.697E-12	2.379E-13
Pb-210	Ra-226	7.972E-16	0.000E+00	2.445E-17	7.080E-17	2.090E-16	4.521E-16	5.941E-16	3.565E-16	4.997E-17
Pb-210	Ra-226	3.800E-15	0.000E+00	1.166E-16	3.375E-16	9.963E-16	2.155E-15	2.832E-15	1.699E-15	2.382E-16
Pb-210	Th-230	1.899E-08	0.000E+00	1.269E-13	1.116E-12	1.143E-11	8.284E-11	4.944E-10	1.469E-09	2.578E-09
Pb-210	Th-230	3.989E-12	0.000E+00	2.666E-17	2.344E-16	2.402E-15	1.740E-14	1.038E-13	3.087E-13	5.415E-13
Pb-210	Th-230	3.795E-12	0.000E+00	2.537E-17	2.230E-16	2.285E-15	1.656E-14	9.880E-14	2.937E-13	5.152E-13
Pb-210	Th-230	7.972E-16	0.000E+00	5.328E-21	4.683E-20	4.800E-19	3.477E-18	2.075E-17	6.168E-17	1.082E-16
Pb-210	Th-230	3.800E-15	0.000E+00	2.540E-20	2.232E-19	2.288E-18	1.658E-17	9.892E-17	2.940E-16	5.158E-16
Pb-210	U-234	1.899E-08	0.000E+00	3.899E-19	1.033E-17	3.577E-16	8.056E-15	1.727E-13	1.537E-12	6.071E-12
Pb-210	U-234	3.989E-12	0.000E+00	8.189E-23	2.169E-21	7.514E-20	1.692E-18	3.627E-17	3.229E-16	1.275E-15
Pb-210	U-234	3.795E-12	0.000E+00	7.792E-23	2.063E-21	7.149E-20	1.610E-18	3.450E-17	3.072E-16	1.213E-15
Pb-210	U-234	7.972E-16	0.000E+00	1.637E-26	4.334E-25	1.502E-23	3.381E-22	7.247E-21	6.452E-20	2.548E-19
Pb-210	U-234	3.800E-15	0.000E+00	7.801E-26	2.066E-24	7.158E-23	1.612E-21	3.455E-20	3.076E-19	1.215E-18
Pb-210	U-238	3.039E-11	0.000E+00	4.409E-28	3.512E-26	4.090E-24	2.824E-22	2.120E-20	5.784E-19	6.103E-18
Pb-210	U-238	6.383E-15	0.000E+00	9.261E-32	7.376E-30	8.592E-28	5.931E-26	4.452E-24	1.215E-22	1.282E-21
Pb-210	U-238	6.073E-15	0.000E+00	8.811E-32	7.018E-30	8.174E-28	5.643E-26	4.236E-24	1.156E-22	1.220E-21
Pb-210	U-238	1.276E-18	0.000E+00	1.851E-35	1.474E-33	1.717E-31	1.185E-29	8.897E-28	2.428E-26	2.562E-25
Pb-210	U-238	6.080E-18	0.000E+00	8.821E-35	7.026E-33	8.184E-31	5.650E-29	4.241E-27	1.157E-25	1.221E-24
Pb-210	U-238	1.896E-08	0.000E+00	2.751E-25	2.191E-23	2.552E-21	1.762E-19	1.323E-17	3.609E-16	3.808E-15
Pb-210	U-238	3.983E-12	0.000E+00	5.779E-29	4.603E-27	5.361E-25	3.701E-23	2.778E-21	7.581E-20	7.999E-19
Pb-210	U-238	3.789E-12	0.000E+00	5.498E-29	4.379E-27	5.101E-25	3.521E-23	2.643E-21	7.213E-20	7.610E-19
Pb-210	U-238	7.959E-16	0.000E+00	1.155E-32	9.198E-31	1.071E-28	7.396E-27	5.552E-25	1.515E-23	1.598E-22
Pb-210	U-238	3.794E-15	0.000E+00	5.505E-32	4.384E-30	5.107E-28	3.525E-26	2.646E-24	7.222E-23	7.619E-22
Pb-210	ΣS(j):		1.900E-08	1.897E-08	1.890E-08	1.867E-08	1.794E-08	1.536E-08	9.968E-09	3.776E-09
Ra-226	Ra-226	9.996E-01	9.996E-01	9.968E-01	9.912E-01	9.719E-01	9.189E-01	7.550E-01	4.306E-01	6.037E-02
Ra-226	Ra-226	1.319E-06	1.319E-06	1.316E-06	1.308E-06	1.283E-06	1.213E-06	9.965E-07	5.684E-07	7.968E-08
Ra-226	Th-230	9.996E-01	0.000E+00	4.324E-04	1.294E-03	4.270E-03	1.246E-02	3.773E-02	8.763E-02	1.437E-01
Ra-226	Th-230	1.319E-06	0.000E+00	5.708E-10	1.708E-09	5.636E-09	1.644E-08	4.981E-08	1.157E-07	1.897E-07
Ra-226	Th-230	1.899E-08	0.000E+00	8.216E-12	2.458E-11	8.113E-11	2.367E-10	7.169E-10	1.665E-09	2.731E-09
Ra-226	U-234	9.996E-01	0.000E+00	1.987E-09	1.781E-08	1.951E-07	1.686E-06	1.627E-05	9.938E-05	3.425E-04
Ra-226	U-234	1.319E-06	0.000E+00	2.623E-15	2.351E-14	2.575E-13	2.225E-12	2.147E-11	1.312E-10	4.521E-10
Ra-226	U-234	1.899E-08	0.000E+00	3.775E-17	3.384E-16	3.706E-15	3.203E-14	3.091E-13	1.888E-12	6.508E-12
Ra-226	U-238	1.599E-03	0.000E+00	2.991E-18	8.038E-17	2.928E-15	7.542E-14	2.371E-12	4.053E-11	3.504E-10
Ra-226	U-238	2.111E-09	0.000E+00	3.948E-24	1.061E-22	3.865E-21	9.955E-20	3.130E-18	5.351E-17	4.625E-16
Ra-226	U-238	3.039E-11	0.000E+00	5.683E-26	1.527E-24	5.563E-23	1.433E-21	4.505E-20	7.701E-19	6.657E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.866E-15	5.015E-14	1.827E-12	4.706E-11	1.480E-09	2.529E-08	2.186E-07

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	0.000E+00	2.464E-21	6.620E-20	2.412E-18	6.212E-17	1.953E-15	3.339E-14	2.886E-13
Ra-226	U-238	1.896E-08	0.000E+00	3.546E-23	9.529E-22	3.471E-20	8.941E-19	2.811E-17	4.806E-16	4.154E-15
Ra-226	ΣS(j):		9.996E-01	9.972E-01	9.925E-01	9.762E-01	9.313E-01	7.927E-01	5.184E-01	2.044E-01
Pb-210	Ra-226	1.319E-06	0.000E+00	4.047E-08	1.172E-07	3.459E-07	7.484E-07	9.833E-07	5.900E-07	8.271E-08
Pb-210	Ra-226	2.771E-10	0.000E+00	8.501E-12	2.461E-11	7.266E-11	1.572E-10	2.065E-10	1.239E-10	1.737E-11
Pb-210	Ra-226	2.637E-10	0.000E+00	8.088E-12	2.342E-11	6.913E-11	1.496E-10	1.965E-10	1.179E-10	1.653E-11
Pb-210	Ra-226	5.538E-14	0.000E+00	1.699E-15	4.919E-15	1.452E-14	3.141E-14	4.128E-14	2.476E-14	3.472E-15
Pb-210	Ra-226	2.640E-13	0.000E+00	8.097E-15	2.345E-14	6.922E-14	1.497E-13	1.967E-13	1.180E-13	1.655E-14
Pb-210	Th-230	1.319E-06	0.000E+00	8.818E-12	7.752E-11	7.944E-10	5.755E-09	3.435E-08	1.021E-07	1.791E-07
Pb-210	Th-230	2.771E-10	0.000E+00	1.852E-15	1.628E-14	1.669E-13	1.209E-12	7.215E-12	2.144E-11	3.762E-11
Pb-210	Th-230	2.637E-10	0.000E+00	1.762E-15	1.549E-14	1.588E-13	1.150E-12	6.864E-12	2.040E-11	3.579E-11
Pb-210	Th-230	5.538E-14	0.000E+00	3.702E-19	3.254E-18	3.335E-17	2.416E-16	1.442E-15	4.285E-15	7.518E-15
Pb-210	Th-230	2.640E-13	0.000E+00	1.764E-18	1.551E-17	1.589E-16	1.152E-15	6.872E-15	2.043E-14	3.584E-14
Pb-210	U-234	1.319E-06	0.000E+00	2.709E-17	7.173E-16	2.485E-14	5.597E-13	1.200E-11	1.068E-10	4.218E-10
Pb-210	U-234	2.771E-10	0.000E+00	5.689E-21	1.507E-19	5.220E-18	1.176E-16	2.519E-15	2.243E-14	8.860E-14
Pb-210	U-234	2.637E-10	0.000E+00	5.413E-21	1.433E-19	4.967E-18	1.118E-16	2.397E-15	2.134E-14	8.429E-14
Pb-210	U-234	5.538E-14	0.000E+00	1.137E-24	3.011E-23	1.043E-21	2.349E-20	5.035E-19	4.483E-18	1.771E-17
Pb-210	U-234	2.640E-13	0.000E+00	5.420E-24	1.435E-22	4.973E-21	1.120E-19	2.400E-18	2.137E-17	8.439E-17
Pb-210	U-238	2.111E-09	0.000E+00	3.063E-26	2.440E-24	2.842E-22	1.962E-20	1.473E-18	4.019E-17	4.240E-16
Pb-210	U-238	4.434E-13	0.000E+00	6.434E-30	5.124E-28	5.969E-26	4.120E-24	3.093E-22	8.441E-21	8.905E-20
Pb-210	U-238	4.219E-13	0.000E+00	6.121E-30	4.875E-28	5.679E-26	3.920E-24	2.943E-22	8.031E-21	8.473E-20
Pb-210	U-238	8.862E-17	0.000E+00	1.286E-33	1.024E-31	1.193E-29	8.234E-28	6.181E-26	1.687E-24	1.780E-23
Pb-210	U-238	4.224E-16	0.000E+00	6.129E-33	4.881E-31	5.686E-29	3.925E-27	2.946E-25	8.040E-24	8.483E-23
Pb-210	U-238	1.317E-06	0.000E+00	1.911E-23	1.522E-21	1.773E-19	1.224E-17	9.189E-16	2.508E-14	2.646E-13
Pb-210	U-238	2.767E-10	0.000E+00	4.015E-27	3.198E-25	3.725E-23	2.571E-21	1.930E-19	5.267E-18	5.557E-17
Pb-210	U-238	2.633E-10	0.000E+00	3.820E-27	3.042E-25	3.544E-23	2.446E-21	1.836E-19	5.011E-18	5.287E-17
Pb-210	U-238	5.530E-14	0.000E+00	8.023E-31	6.390E-29	7.443E-27	5.138E-25	3.857E-23	1.053E-21	1.110E-20
Pb-210	U-238	2.636E-13	0.000E+00	3.824E-30	3.046E-28	3.548E-26	2.449E-24	1.838E-22	5.017E-21	5.293E-20
Pb-210	ΣS(j):		0.000E+00	4.050E-08	1.173E-07	3.469E-07	7.544E-07	1.018E-06	6.925E-07	2.624E-07
Ra-226	Ra-226	1.899E-08	1.899E-08	1.894E-08	1.883E-08	1.847E-08	1.746E-08	1.434E-08	8.182E-09	1.147E-09
Ra-226	Ra-226	2.100E-04	2.100E-04	2.094E-04	2.082E-04	2.041E-04	1.930E-04	1.586E-04	9.045E-05	1.268E-05
Ra-226	ΣS(j):		2.100E-04	2.094E-04	2.082E-04	2.042E-04	1.930E-04	1.586E-04	9.046E-05	1.268E-05
Ra-226	Ra-226	2.771E-10	2.771E-10	2.764E-10	2.748E-10	2.695E-10	2.548E-10	2.093E-10	1.194E-10	1.674E-11
Ra-226	Ra-226	3.989E-12	3.989E-12	3.978E-12	3.956E-12	3.879E-12	3.667E-12	3.013E-12	1.719E-12	2.409E-13
Ra-226	ΣS(j):		2.811E-10	2.803E-10	2.788E-10	2.734E-10	2.584E-10	2.123E-10	1.211E-10	1.698E-11
Ra-226	Ra-226	1.998E-04	1.998E-04	1.992E-04	1.981E-04	1.942E-04	1.836E-04	1.509E-04	8.606E-05	1.206E-05
Ra-226	Ra-226	2.637E-10	2.637E-10	2.629E-10	2.615E-10	2.564E-10	2.424E-10	1.991E-10	1.136E-10	1.592E-11
Ra-226	Th-230	1.998E-04	0.000E+00	8.642E-08	2.585E-07	8.533E-07	2.489E-06	7.541E-06	1.751E-05	2.872E-05
Ra-226	Th-230	2.637E-10	0.000E+00	1.141E-13	3.412E-13	1.126E-12	3.286E-12	9.954E-12	2.312E-11	3.792E-11
Ra-226	Th-230	3.795E-12	0.000E+00	1.642E-15	4.912E-15	1.621E-14	4.730E-14	1.433E-13	3.327E-13	5.458E-13
Ra-226	U-234	1.998E-04	0.000E+00	3.971E-13	3.559E-12	3.898E-11	3.368E-10	3.251E-09	1.986E-08	6.845E-08
Ra-226	U-234	2.637E-10	0.000E+00	5.241E-19	4.698E-18	5.146E-17	4.446E-16	4.291E-15	2.622E-14	9.036E-14
Ra-226	U-234	3.795E-12	0.000E+00	7.544E-21	6.762E-20	7.407E-19	6.400E-18	6.177E-17	3.773E-16	1.301E-15
Ra-226	U-238	3.196E-07	0.000E+00	5.977E-22	1.606E-20	5.851E-19	1.507E-17	4.739E-16	8.100E-15	7.002E-14
Ra-226	U-238	4.219E-13	0.000E+00	7.890E-28	2.120E-26	7.724E-25	1.989E-23	6.255E-22	1.069E-20	9.243E-20

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	0.000E+00	1.136E-29	3.052E-28	1.112E-26	2.864E-25	9.003E-24	1.539E-22	1.330E-21
Ra-226	U-238	1.994E-04	0.000E+00	3.730E-19	1.002E-17	3.651E-16	9.404E-15	2.957E-13	5.055E-12	4.369E-11
Ra-226	U-238	2.633E-10	0.000E+00	4.923E-25	1.323E-23	4.820E-22	1.241E-20	3.903E-19	6.672E-18	5.768E-17
Ra-226	U-238	3.789E-12	0.000E+00	7.087E-27	1.904E-25	6.937E-24	1.787E-22	5.618E-21	9.604E-20	8.302E-19
Ra-226	ΣS(j):		1.998E-04	1.993E-04	1.983E-04	1.951E-04	1.861E-04	1.584E-04	1.036E-04	4.086E-05
Ra-226	Ra-226	3.795E-12	3.795E-12	3.785E-12	3.764E-12	3.690E-12	3.489E-12	2.867E-12	1.635E-12	2.292E-13
Ra-226	Ra-226	4.196E-08	4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	ΣS(j):		4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	Ra-226	5.538E-14	5.538E-14	5.523E-14	5.492E-14	5.385E-14	5.091E-14	4.183E-14	2.386E-14	3.345E-15
Ra-226	Ra-226	7.972E-16	7.972E-16	7.950E-16	7.905E-16	7.751E-16	7.328E-16	6.021E-16	3.434E-16	4.814E-17
Ra-226	ΣS(j):		5.618E-14	5.602E-14	5.571E-14	5.463E-14	5.164E-14	4.243E-14	2.420E-14	3.393E-15
Ra-226	Ra-226	2.000E-07	2.000E-07	1.994E-07	1.983E-07	1.945E-07	1.838E-07	1.511E-07	8.616E-08	1.208E-08
Ra-226	Ra-226	2.640E-13	2.640E-13	2.633E-13	2.618E-13	2.567E-13	2.427E-13	1.994E-13	1.137E-13	1.594E-14
Ra-226	Th-230	2.000E-07	0.000E+00	8.652E-11	2.588E-10	8.543E-10	2.492E-09	7.550E-09	1.753E-08	2.876E-08
Ra-226	Th-230	2.640E-13	0.000E+00	1.142E-16	3.417E-16	1.128E-15	3.290E-15	9.966E-15	2.314E-14	3.796E-14
Ra-226	Th-230	3.800E-15	0.000E+00	1.644E-18	4.918E-18	1.623E-17	4.736E-17	1.434E-16	3.331E-16	5.464E-16
Ra-226	U-234	2.000E-07	0.000E+00	3.975E-16	3.563E-15	3.903E-14	3.372E-13	3.255E-12	1.988E-11	6.853E-11
Ra-226	U-234	2.640E-13	0.000E+00	5.248E-22	4.704E-21	5.152E-20	4.452E-19	4.296E-18	2.625E-17	9.046E-17
Ra-226	U-234	3.800E-15	0.000E+00	7.553E-24	6.770E-23	7.416E-22	6.408E-21	6.184E-20	3.778E-19	1.302E-18
Ra-226	U-238	3.200E-10	0.000E+00	5.984E-25	1.608E-23	5.858E-22	1.509E-20	4.744E-19	8.110E-18	7.011E-17
Ra-226	U-238	4.224E-16	0.000E+00	7.899E-31	2.123E-29	7.733E-28	1.992E-26	6.262E-25	1.071E-23	9.254E-23
Ra-226	U-238	6.080E-18	0.000E+00	1.137E-32	3.056E-31	1.113E-29	2.867E-28	9.014E-27	1.541E-25	1.332E-24
Ra-226	U-238	1.997E-07	0.000E+00	3.734E-22	1.003E-20	3.656E-19	9.416E-18	2.960E-16	5.061E-15	4.375E-14
Ra-226	U-238	2.636E-13	0.000E+00	4.929E-28	1.325E-26	4.826E-25	1.243E-23	3.908E-22	6.680E-21	5.775E-20
Ra-226	U-238	3.794E-15	0.000E+00	7.095E-30	1.907E-28	6.946E-27	1.789E-25	5.625E-24	9.615E-23	8.312E-22
Ra-226	ΣS(j):		2.000E-07	1.995E-07	1.986E-07	1.953E-07	1.863E-07	1.586E-07	1.037E-07	4.091E-08
Ra-226	Ra-226	3.800E-15	3.800E-15	3.789E-15	3.768E-15	3.695E-15	3.493E-15	2.870E-15	1.637E-15	2.295E-16
Th-230	Th-230	9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.984E-01	9.960E-01	9.877E-01
Th-230	Th-230	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.318E-06	1.315E-06	1.304E-06
Th-230	U-234	9.996E-01	0.000E+00	9.176E-06	2.744E-05	9.040E-05	2.624E-04	7.816E-04	1.742E-03	2.644E-03
Th-230	U-234	1.319E-06	0.000E+00	1.211E-11	3.622E-11	1.193E-10	3.464E-10	1.032E-09	2.299E-09	3.490E-09
Th-230	U-234	1.899E-08	0.000E+00	1.743E-13	5.213E-13	1.718E-12	4.986E-12	1.485E-11	3.310E-11	5.023E-11
Th-230	U-234	2.100E-04	0.000E+00	1.927E-09	5.763E-09	1.899E-08	5.512E-08	1.642E-07	3.659E-07	5.553E-07
Th-230	U-234	2.771E-10	0.000E+00	2.544E-15	7.607E-15	2.506E-14	7.275E-14	2.167E-13	4.830E-13	7.330E-13
Th-230	U-234	3.989E-12	0.000E+00	3.662E-17	1.095E-16	3.608E-16	1.047E-15	3.119E-15	6.952E-15	1.055E-14
Th-230	U-234	1.998E-04	0.000E+00	1.834E-09	5.483E-09	1.807E-08	5.244E-08	1.562E-07	3.481E-07	5.283E-07
Th-230	U-234	2.637E-10	0.000E+00	2.421E-15	7.238E-15	2.385E-14	6.922E-14	2.062E-13	4.595E-13	6.974E-13
Th-230	U-234	3.795E-12	0.000E+00	3.484E-17	1.042E-16	3.432E-16	9.963E-16	2.968E-15	6.614E-15	1.004E-14
Th-230	U-234	4.196E-08	0.000E+00	3.852E-13	1.152E-12	3.795E-12	1.101E-11	3.281E-11	7.312E-11	1.110E-10
Th-230	U-234	5.538E-14	0.000E+00	5.084E-19	1.520E-18	5.009E-18	1.454E-17	4.331E-17	9.651E-17	1.465E-16
Th-230	U-234	7.972E-16	0.000E+00	7.318E-21	2.188E-20	7.210E-20	2.093E-19	6.233E-19	1.389E-18	2.108E-18
Th-230	U-234	2.000E-07	0.000E+00	1.836E-12	5.490E-12	1.809E-11	5.250E-11	1.564E-10	3.485E-10	5.290E-10
Th-230	U-234	2.640E-13	0.000E+00	2.424E-18	7.246E-18	2.388E-17	6.930E-17	2.064E-16	4.601E-16	6.982E-16
Th-230	U-234	3.800E-15	0.000E+00	3.488E-20	1.043E-19	3.437E-19	9.975E-19	2.971E-18	6.622E-18	1.005E-17

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	0.000E+00	2.072E-14	1.856E-13	2.031E-12	1.749E-11	1.668E-10	9.884E-10	3.158E-09
Th-230	U-238	2.111E-09	0.000E+00	2.734E-20	2.450E-19	2.680E-18	2.308E-17	2.202E-16	1.305E-15	4.168E-15
Th-230	U-238	3.039E-11	0.000E+00	3.936E-22	3.527E-21	3.858E-20	3.323E-19	3.170E-18	1.878E-17	5.999E-17
Th-230	U-238	3.359E-07	0.000E+00	4.351E-18	3.899E-17	4.265E-16	3.673E-15	3.504E-14	2.076E-13	6.632E-13
Th-230	U-238	4.434E-13	0.000E+00	5.743E-24	5.146E-23	5.630E-22	4.848E-21	4.626E-20	2.740E-19	8.754E-19
Th-230	U-238	6.383E-15	0.000E+00	8.267E-26	7.408E-25	8.104E-24	6.979E-23	6.658E-22	3.945E-21	1.260E-20
Th-230	U-238	3.196E-07	0.000E+00	4.140E-18	3.709E-17	4.058E-16	3.495E-15	3.334E-14	1.975E-13	6.310E-13
Th-230	U-238	4.219E-13	0.000E+00	5.464E-24	4.896E-23	5.357E-22	4.613E-21	4.401E-20	2.607E-19	8.329E-19
Th-230	U-238	6.073E-15	0.000E+00	7.866E-26	7.048E-25	7.710E-24	6.640E-23	6.335E-22	3.753E-21	1.199E-20
Th-230	U-238	6.713E-11	0.000E+00	8.695E-22	7.791E-21	8.524E-20	7.340E-19	7.003E-18	4.149E-17	1.325E-16
Th-230	U-238	8.862E-17	0.000E+00	1.148E-27	1.028E-26	1.125E-25	9.689E-25	9.244E-24	5.476E-23	1.749E-22
Th-230	U-238	1.276E-18	0.000E+00	1.652E-29	1.480E-28	1.620E-27	1.395E-26	1.331E-25	7.883E-25	2.518E-24
Th-230	U-238	3.200E-10	0.000E+00	4.145E-21	3.714E-20	4.063E-19	3.499E-18	3.338E-17	1.978E-16	6.318E-16
Th-230	U-238	4.224E-16	0.000E+00	5.471E-27	4.902E-26	5.363E-25	4.619E-24	4.406E-23	2.610E-22	8.339E-22
Th-230	U-238	6.080E-18	0.000E+00	7.875E-29	7.056E-28	7.720E-27	6.648E-26	6.342E-25	3.757E-24	1.200E-23
Th-230	U-238	9.980E-01	0.000E+00	1.293E-11	1.158E-10	1.267E-09	1.091E-08	1.041E-07	6.168E-07	1.970E-06
Th-230	U-238	1.317E-06	0.000E+00	1.706E-17	1.529E-16	1.673E-15	1.440E-14	1.374E-13	8.141E-13	2.601E-12
Th-230	U-238	1.896E-08	0.000E+00	2.456E-19	2.201E-18	2.408E-17	2.073E-16	1.978E-15	1.172E-14	3.744E-14
Th-230	U-238	2.096E-04	0.000E+00	2.715E-15	2.433E-14	2.662E-13	2.292E-12	2.187E-11	1.295E-10	4.138E-10
Th-230	U-238	2.767E-10	0.000E+00	3.584E-21	3.211E-20	3.513E-19	3.025E-18	2.886E-17	1.710E-16	5.463E-16
Th-230	U-238	3.983E-12	0.000E+00	5.159E-23	4.622E-22	5.057E-21	4.355E-20	4.155E-19	2.461E-18	7.863E-18
Th-230	U-238	1.994E-04	0.000E+00	2.583E-15	2.315E-14	2.532E-13	2.181E-12	2.080E-11	1.233E-10	3.937E-10
Th-230	U-238	2.633E-10	0.000E+00	3.410E-21	3.055E-20	3.343E-19	2.878E-18	2.746E-17	1.627E-16	5.197E-16
Th-230	U-238	3.789E-12	0.000E+00	4.908E-23	4.398E-22	4.811E-21	4.143E-20	3.953E-19	2.342E-18	7.481E-18
Th-230	U-238	4.189E-08	0.000E+00	5.426E-19	4.862E-18	5.319E-17	4.580E-16	4.370E-15	2.589E-14	8.270E-14
Th-230	U-238	5.530E-14	0.000E+00	7.162E-25	6.417E-24	7.021E-23	6.046E-22	5.768E-21	3.417E-20	1.092E-19
Th-230	U-238	7.959E-16	0.000E+00	1.031E-26	9.237E-26	1.011E-24	8.703E-24	8.303E-23	4.919E-22	1.571E-21
Th-230	U-238	1.997E-07	0.000E+00	2.586E-18	2.317E-17	2.535E-16	2.183E-15	2.083E-14	1.234E-13	3.942E-13
Th-230	U-238	2.636E-13	0.000E+00	3.414E-24	3.059E-23	3.347E-22	2.882E-21	2.749E-20	1.629E-19	5.204E-19
Th-230	U-238	3.794E-15	0.000E+00	4.914E-26	4.403E-25	4.817E-24	4.148E-23	3.958E-22	2.345E-21	7.490E-21
Th-230	ΣS(j):		9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.977E-01	9.903E-01
Th-230	Th-230	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.897E-08	1.892E-08	1.877E-08
Th-230	Th-230	2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Th-230	ΣS(j):		2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Ra-226	Th-230	2.100E-04	0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.926E-06	1.841E-05	3.019E-05
Ra-226	Th-230	3.989E-12	0.000E+00	1.726E-15	5.163E-15	1.704E-14	4.971E-14	1.506E-13	3.497E-13	5.736E-13
Ra-226	U-234	2.100E-04	0.000E+00	4.173E-13	3.741E-12	4.097E-11	3.540E-10	3.417E-09	2.087E-08	7.195E-08
Ra-226	U-234	2.771E-10	0.000E+00	5.509E-19	4.938E-18	5.408E-17	4.673E-16	4.510E-15	2.755E-14	9.497E-14
Ra-226	U-234	3.989E-12	0.000E+00	7.929E-21	7.107E-20	7.785E-19	6.727E-18	6.492E-17	3.966E-16	1.367E-15
Ra-226	U-238	3.359E-07	0.000E+00	6.282E-22	1.688E-20	6.150E-19	1.584E-17	4.980E-16	8.514E-15	7.360E-14
Ra-226	U-238	4.434E-13	0.000E+00	8.293E-28	2.228E-26	8.118E-25	2.091E-23	6.574E-22	1.124E-20	9.715E-20
Ra-226	U-238	6.383E-15	0.000E+00	1.194E-29	3.208E-28	1.169E-26	3.010E-25	9.463E-24	1.618E-22	1.398E-21
Ra-226	U-238	2.096E-04	0.000E+00	3.920E-19	1.053E-17	3.838E-16	9.885E-15	3.108E-13	5.313E-12	4.592E-11
Ra-226	U-238	2.767E-10	0.000E+00	5.175E-25	1.391E-23	5.066E-22	1.305E-20	4.102E-19	7.013E-18	6.062E-17
Ra-226	U-238	3.983E-12	0.000E+00	7.448E-27	2.002E-25	7.292E-24	1.878E-22	5.905E-21	1.009E-19	8.726E-19
Ra-226	ΣS(j):		0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.929E-06	1.843E-05	3.026E-05

Summary : Recreator_Soil + Game and Fowl

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.770E-10	2.768E-10	2.762E-10	2.738E-10
Th-230	Th-230	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.988E-12	3.984E-12	3.975E-12	3.942E-12
Th-230	ΣS(j):		2.811E-10	2.811E-10	2.811E-10	2.811E-10	2.810E-10	2.808E-10	2.801E-10	2.778E-10
Ra-226	Th-230	2.771E-10	0.000E+00	1.199E-13	3.587E-13	1.184E-12	3.454E-12	1.046E-11	2.430E-11	3.985E-11
Th-230	Th-230	1.998E-04	1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	2.637E-10	2.637E-10	2.637E-10	2.637E-10	2.636E-10	2.636E-10	2.634E-10	2.627E-10	2.605E-10
Th-230	ΣS(j):		1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.794E-12	3.791E-12	3.782E-12	3.750E-12
Th-230	Th-230	4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.194E-08	4.191E-08	4.181E-08	4.146E-08
Th-230	ΣS(j):		4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.191E-08	4.181E-08	4.146E-08
Ra-226	Th-230	4.196E-08	0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.229E-10	1.584E-09	3.678E-09	6.033E-09
Ra-226	Th-230	7.972E-16	0.000E+00	3.449E-19	1.032E-18	3.405E-18	9.935E-18	3.009E-17	6.989E-17	1.146E-16
Ra-226	U-234	4.196E-08	0.000E+00	8.340E-17	7.475E-16	8.188E-15	7.075E-14	6.828E-13	4.172E-12	1.438E-11
Ra-226	U-234	5.538E-14	0.000E+00	1.101E-22	9.868E-22	1.081E-20	9.339E-20	9.014E-19	5.506E-18	1.898E-17
Ra-226	U-234	7.972E-16	0.000E+00	1.585E-24	1.420E-23	1.556E-22	1.344E-21	1.297E-20	7.926E-20	2.732E-19
Ra-226	U-238	6.713E-11	0.000E+00	1.255E-25	3.374E-24	1.229E-22	3.166E-21	9.953E-20	1.701E-18	1.471E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.657E-31	4.453E-30	1.622E-28	4.179E-27	1.314E-25	2.246E-24	1.941E-23
Ra-226	U-238	1.276E-18	0.000E+00	2.385E-33	6.410E-32	2.335E-30	6.015E-29	1.891E-27	3.233E-26	2.794E-25
Ra-226	U-238	4.189E-08	0.000E+00	7.834E-23	2.105E-21	7.669E-20	1.975E-18	6.211E-17	1.062E-15	9.178E-15
Ra-226	U-238	5.530E-14	0.000E+00	1.034E-28	2.779E-27	1.012E-25	2.607E-24	8.198E-23	1.401E-21	1.211E-20
Ra-226	U-238	7.959E-16	0.000E+00	1.488E-30	4.000E-29	1.457E-27	3.753E-26	1.180E-24	2.017E-23	1.744E-22
Ra-226	ΣS(j):		0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.230E-10	1.585E-09	3.683E-09	6.048E-09
Th-230	Th-230	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.536E-14	5.532E-14	5.519E-14	5.473E-14
Th-230	Th-230	7.972E-16	7.972E-16	7.972E-16	7.972E-16	7.971E-16	7.969E-16	7.962E-16	7.943E-16	7.877E-16
Th-230	ΣS(j):		5.618E-14	5.618E-14	5.618E-14	5.618E-14	5.616E-14	5.611E-14	5.598E-14	5.551E-14
Ra-226	Th-230	5.538E-14	0.000E+00	2.396E-17	7.168E-17	2.366E-16	6.902E-16	2.091E-15	4.855E-15	7.964E-15
Th-230	Th-230	2.000E-07	2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.639E-13	2.637E-13	2.631E-13	2.609E-13
Th-230	ΣS(j):		2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.799E-15	3.795E-15	3.786E-15	3.755E-15
U-234	U-234	9.996E-01	9.996E-01	9.963E-01	9.897E-01	9.669E-01	9.048E-01	7.171E-01	3.690E-01	3.607E-02
U-234	U-234	1.319E-06	1.319E-06	1.315E-06	1.306E-06	1.276E-06	1.194E-06	9.465E-07	4.871E-07	4.761E-08
U-234	U-238	1.599E-03	0.000E+00	4.501E-09	1.341E-08	4.368E-08	1.226E-07	3.240E-07	5.003E-07	1.632E-07
U-234	U-238	2.111E-09	0.000E+00	5.941E-15	1.770E-14	5.766E-14	1.619E-13	4.276E-13	6.604E-13	2.154E-13
U-234	U-238	3.039E-11	0.000E+00	8.551E-17	2.548E-16	8.299E-16	2.330E-15	6.155E-15	9.505E-15	3.100E-15
U-234	U-238	3.359E-07	0.000E+00	9.453E-13	2.817E-12	9.175E-12	2.576E-11	6.805E-11	1.051E-10	3.427E-11
U-234	U-238	4.434E-13	0.000E+00	1.248E-18	3.719E-18	1.211E-17	3.400E-17	8.982E-17	1.387E-16	4.524E-17
U-234	U-238	6.383E-15	0.000E+00	1.796E-20	5.353E-20	1.743E-19	4.894E-19	1.293E-18	1.997E-18	6.512E-19
U-234	U-238	3.196E-07	0.000E+00	8.994E-13	2.680E-12	8.729E-12	2.451E-11	6.474E-11	9.997E-11	3.261E-11
U-234	U-238	4.219E-13	0.000E+00	1.187E-18	3.538E-18	1.152E-17	3.235E-17	8.546E-17	1.320E-16	4.304E-17

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	0.000E+00	1.709E-20	5.093E-20	1.659E-19	4.656E-19	1.230E-18	1.900E-18	6.195E-19
U-234	U-238	6.713E-11	0.000E+00	1.889E-16	5.630E-16	1.834E-15	5.147E-15	1.360E-14	2.100E-14	6.849E-15
U-234	U-238	8.862E-17	0.000E+00	2.494E-22	7.432E-22	2.420E-21	6.794E-21	1.795E-20	2.772E-20	9.040E-21
U-234	U-238	1.276E-18	0.000E+00	3.589E-24	1.070E-23	3.484E-23	9.780E-23	2.584E-22	3.990E-22	1.301E-22
U-234	U-238	3.200E-10	0.000E+00	9.005E-16	2.684E-15	8.740E-15	2.453E-14	6.482E-14	1.001E-13	3.265E-14
U-234	U-238	4.224E-16	0.000E+00	1.189E-21	3.542E-21	1.154E-20	3.239E-20	8.556E-20	1.321E-19	4.309E-20
U-234	U-238	6.080E-18	0.000E+00	1.711E-23	5.099E-23	1.661E-22	4.662E-22	1.232E-21	1.902E-21	6.203E-22
U-234	U-238	9.980E-01	0.000E+00	2.808E-06	8.369E-06	2.726E-05	7.652E-05	2.022E-04	3.122E-04	1.018E-04
U-234	U-238	1.317E-06	0.000E+00	3.707E-12	1.105E-11	3.598E-11	1.010E-10	2.668E-10	4.121E-10	1.344E-10
U-234	U-238	1.896E-08	0.000E+00	5.336E-14	1.590E-13	5.179E-13	1.454E-12	3.841E-12	5.931E-12	1.934E-12
U-234	U-238	2.096E-04	0.000E+00	5.899E-10	1.758E-09	5.725E-09	1.607E-08	4.246E-08	6.557E-08	2.139E-08
U-234	U-238	2.767E-10	0.000E+00	7.787E-16	2.320E-15	7.557E-15	2.122E-14	5.605E-14	8.655E-14	2.823E-14
U-234	U-238	3.983E-12	0.000E+00	1.121E-17	3.340E-17	1.088E-16	3.054E-16	8.068E-16	1.246E-15	4.063E-16
U-234	U-238	1.994E-04	0.000E+00	5.612E-10	1.673E-09	5.447E-09	1.529E-08	4.040E-08	6.238E-08	2.035E-08
U-234	U-238	2.633E-10	0.000E+00	7.408E-16	2.208E-15	7.190E-15	2.018E-14	5.333E-14	8.235E-14	2.686E-14
U-234	U-238	3.789E-12	0.000E+00	1.066E-17	3.178E-17	1.035E-16	2.905E-16	7.676E-16	1.185E-15	3.866E-16
U-234	U-238	4.189E-08	0.000E+00	1.179E-13	3.513E-13	1.144E-12	3.212E-12	8.486E-12	1.310E-11	4.274E-12
U-234	U-238	5.530E-14	0.000E+00	1.556E-19	4.637E-19	1.510E-18	4.240E-18	1.120E-17	1.730E-17	5.641E-18
U-234	U-238	7.959E-16	0.000E+00	2.240E-21	6.675E-21	2.174E-20	6.102E-20	1.612E-19	2.490E-19	8.120E-20
U-234	U-238	1.997E-07	0.000E+00	5.619E-13	1.675E-12	5.454E-12	1.531E-11	4.045E-11	6.246E-11	2.037E-11
U-234	U-238	2.636E-13	0.000E+00	7.417E-19	2.210E-18	7.199E-18	2.021E-17	5.339E-17	8.245E-17	2.689E-17
U-234	U-238	3.794E-15	0.000E+00	1.068E-20	3.182E-20	1.036E-19	2.909E-19	7.685E-19	1.187E-18	3.871E-19
U-234	ΣS(j):		9.996E-01	9.963E-01	9.897E-01	9.670E-01	9.049E-01	7.173E-01	3.693E-01	3.617E-02
U-234	U-234	1.899E-08	1.899E-08	1.893E-08	1.880E-08	1.837E-08	1.719E-08	1.362E-08	7.011E-09	6.853E-10
U-234	U-234	2.100E-04	2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.900E-04	1.506E-04	7.750E-05	7.576E-06
U-234	ΣS(j):		2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.901E-04	1.506E-04	7.751E-05	7.576E-06
U-234	U-234	2.771E-10	2.771E-10	2.762E-10	2.744E-10	2.681E-10	2.509E-10	1.988E-10	1.023E-10	1.000E-11
U-234	U-234	3.989E-12	3.989E-12	3.976E-12	3.950E-12	3.859E-12	3.611E-12	2.862E-12	1.473E-12	1.439E-13
U-234	ΣS(j):		2.811E-10	2.802E-10	2.783E-10	2.719E-10	2.545E-10	2.017E-10	1.038E-10	1.014E-11
U-234	U-234	1.998E-04	1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	2.637E-10	2.637E-10	2.628E-10	2.611E-10	2.551E-10	2.387E-10	1.892E-10	9.733E-11	9.514E-12
U-234	ΣS(j):		1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	3.795E-12	3.795E-12	3.783E-12	3.758E-12	3.671E-12	3.435E-12	2.723E-12	1.401E-12	1.369E-13
U-234	U-234	4.196E-08	4.196E-08	4.182E-08	4.154E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	ΣS(j):		4.196E-08	4.182E-08	4.155E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	U-234	5.538E-14	5.538E-14	5.520E-14	5.484E-14	5.357E-14	5.013E-14	3.973E-14	2.044E-14	1.998E-15
U-234	U-234	7.972E-16	7.972E-16	7.946E-16	7.893E-16	7.712E-16	7.216E-16	5.719E-16	2.943E-16	2.876E-17
U-234	ΣS(j):		5.618E-14	5.600E-14	5.562E-14	5.435E-14	5.085E-14	4.030E-14	2.074E-14	2.027E-15
U-234	U-234	2.000E-07	2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	2.640E-13	2.640E-13	2.631E-13	2.614E-13	2.554E-13	2.390E-13	1.894E-13	9.745E-14	9.526E-15
U-234	ΣS(j):		2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	3.800E-15	3.800E-15	3.787E-15	3.762E-15	3.676E-15	3.440E-15	2.726E-15	1.403E-15	1.371E-16

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	5.450E-07	5.432E-07	5.396E-07	5.272E-07	4.933E-07	3.911E-07	2.014E-07	1.972E-08
U-238	U-238	1.599E-03	1.599E-03	1.594E-03	1.583E-03	1.547E-03	1.448E-03	1.148E-03	5.909E-04	5.787E-05
U-238	ΣS(j):		1.600E-03	1.595E-03	1.584E-03	1.548E-03	1.448E-03	1.148E-03	5.911E-04	5.789E-05
U-238	U-238	2.111E-09	2.111E-09	2.104E-09	2.090E-09	2.042E-09	1.911E-09	1.515E-09	7.800E-10	7.639E-11
U-238	U-238	3.039E-11	3.039E-11	3.029E-11	3.009E-11	2.940E-11	2.751E-11	2.180E-11	1.123E-11	1.100E-12
U-238	ΣS(j):		2.142E-09	2.134E-09	2.120E-09	2.072E-09	1.939E-09	1.537E-09	7.912E-10	7.749E-11
U-238	U-238	3.359E-07	3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	4.434E-13	4.434E-13	4.420E-13	4.390E-13	4.290E-13	4.014E-13	3.182E-13	1.638E-13	1.605E-14
U-238	ΣS(j):		3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	6.383E-15	6.383E-15	6.362E-15	6.319E-15	6.174E-15	5.778E-15	4.580E-15	2.358E-15	2.310E-16
U-238	U-238	3.196E-07	3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	ΣS(j):		3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	U-238	4.219E-13	4.219E-13	4.205E-13	4.177E-13	4.081E-13	3.819E-13	3.027E-13	1.559E-13	1.527E-14
U-238	U-238	6.073E-15	6.073E-15	6.053E-15	6.012E-15	5.874E-15	5.497E-15	4.357E-15	2.244E-15	2.197E-16
U-238	ΣS(j):		4.280E-13	4.265E-13	4.237E-13	4.140E-13	3.874E-13	3.071E-13	1.581E-13	1.549E-14
U-238	U-238	6.713E-11	6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	8.862E-17	8.862E-17	8.832E-17	8.774E-17	8.572E-17	8.022E-17	6.359E-17	3.274E-17	3.206E-18
U-238	ΣS(j):		6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	1.276E-18	1.276E-18	1.271E-18	1.263E-18	1.234E-18	1.155E-18	9.153E-19	4.712E-19	4.615E-20
U-238	U-238	3.200E-10	3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	ΣS(j):		3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	U-238	4.224E-16	4.224E-16	4.210E-16	4.182E-16	4.086E-16	3.824E-16	3.031E-16	1.561E-16	1.528E-17
U-238	U-238	6.080E-18	6.080E-18	6.060E-18	6.020E-18	5.882E-18	5.504E-18	4.363E-18	2.246E-18	2.200E-19
U-238	ΣS(j):		4.285E-16	4.271E-16	4.242E-16	4.145E-16	3.879E-16	3.075E-16	1.583E-16	1.550E-17
U-238	U-238	9.980E-01	9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.317E-06	1.317E-06	1.313E-06	1.304E-06	1.274E-06	1.192E-06	9.453E-07	4.867E-07	4.767E-08
U-238	ΣS(j):		9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.896E-08	1.896E-08	1.890E-08	1.877E-08	1.834E-08	1.716E-08	1.361E-08	7.005E-09	6.861E-10
U-238	U-238	2.096E-04	2.096E-04	2.089E-04	2.075E-04	2.028E-04	1.898E-04	1.504E-04	7.744E-05	7.585E-06
U-238	ΣS(j):		2.096E-04	2.089E-04	2.076E-04	2.028E-04	1.898E-04	1.504E-04	7.745E-05	7.586E-06
U-238	U-238	2.767E-10	2.767E-10	2.758E-10	2.740E-10	2.677E-10	2.505E-10	1.985E-10	1.022E-10	1.001E-11
U-238	U-238	3.983E-12	3.983E-12	3.970E-12	3.943E-12	3.853E-12	3.605E-12	2.858E-12	1.471E-12	1.441E-13
U-238	ΣS(j):		2.807E-10	2.798E-10	2.779E-10	2.715E-10	2.541E-10	2.014E-10	1.037E-10	1.016E-11
U-238	U-238	1.994E-04	1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	2.633E-10	2.633E-10	2.624E-10	2.607E-10	2.547E-10	2.383E-10	1.889E-10	9.726E-11	9.526E-12
U-238	ΣS(j):		1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	3.789E-12	3.789E-12	3.777E-12	3.752E-12	3.666E-12	3.430E-12	2.719E-12	1.400E-12	1.371E-13

Summary : Recreator_Soil + Game and Fowl

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	4.189E-08	4.175E-08	4.148E-08	4.052E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	ΣS(j):		4.189E-08	4.176E-08	4.148E-08	4.053E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	U-238	5.530E-14	5.530E-14	5.511E-14	5.475E-14	5.349E-14	5.006E-14	3.968E-14	2.043E-14	2.001E-15
U-238	U-238	7.959E-16	7.959E-16	7.933E-16	7.880E-16	7.699E-16	7.205E-16	5.711E-16	2.941E-16	2.880E-17
U-238	ΣS(j):		5.609E-14	5.591E-14	5.554E-14	5.426E-14	5.078E-14	4.025E-14	2.072E-14	2.030E-15
U-238	U-238	1.997E-07	1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	2.636E-13	2.636E-13	2.627E-13	2.610E-13	2.550E-13	2.386E-13	1.891E-13	9.738E-14	9.537E-15
U-238	ΣS(j):		1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	3.794E-15	3.794E-15	3.781E-15	3.756E-15	3.670E-15	3.434E-15	2.722E-15	1.402E-15	1.373E-16

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 151.82 seconds

Total water/soil iteration failures = 1.400E+01.

RESidual RADioactivity (ResRad) Dose-Modeling Output
Outdoor Worker

Summary : Recreator (Outdoor Worker)

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Time = 0.000E+00	13
Time = 1.000E+00	14
Time = 3.000E+00	15
Time = 1.000E+01	16
Time = 3.000E+01	17
Time = 1.000E+02	18
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Summary : Recreator (Outdoor Worker)

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1 (1)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1 (2)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1 (3)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1 (4)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1 (5)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1 (6)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1 (7)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1 (8)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1 (9)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1 (10)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1 (11)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1 (12)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1 (13)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1 (14)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1 (15)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1 (16)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1 (17)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1 (18)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1 (19)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1 (20)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.129E-02	2.077E-02	DCF2 (1)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2 (2)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2 (3)
B-1	Po-210	1.580E-02	1.582E-02	DCF2 (4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2 (5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2 (8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2 (11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2 (14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2 (17)
B-1	Th-230	3.760E-01	3.759E-01	DCF2 (20)
B-1	U-234	3.480E-02	3.479E-02	DCF2 (35)
B-1	U-238	2.970E-02	2.973E-02	DCF2 (50)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2 (51)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2 (66)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	2.585E-03	2.575E-03	DCF3 (1)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3 (2)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3 (3)
D-1	Po-210	4.480E-03	4.477E-03	DCF3 (4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3 (8)
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3 (11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3 (14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3 (17)
D-1	Th-230	7.920E-04	7.918E-04	DCF3 (20)
D-1	U-234	1.830E-04	1.831E-04	DCF3 (35)

Summary : Recreator (Outdoor Worker)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	U-238	1.650E-04	1.650E-04	DCF3(50)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(51)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(66)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(35,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(35,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(35,3)
D-34				

Summary : Recreator (Outdoor Worker)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(50,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(50,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(50,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(66,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(66,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(66,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(35,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(35,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(50,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(50,2)
D-5				

Summary : Recreator (Outdoor Worker)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5				
D-5	U-238+D1 , fish	1.000E+01	1.000E+01	BIOFAC(66,1)
D-5	U-238+D1 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(66,2)
D-5				

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Recreator (Outdoor Worker)

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.200E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(35)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(50)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(35)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(50)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ

Summary : Recreator (Outdoor Worker)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsat. zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.632E-02	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC (5)
R016	Unsat. zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC (20)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)

Summary : Recreator (Outdoor Worker)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (35)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (35,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (35)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (35)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (35)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (50)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (50,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (50)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (50)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (50)
R017	Inhalation rate (m**3/yr)	1.350E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.100E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)

Summary : Recreator (Outdoor Worker)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	2.300E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Summary : Recreator (Outdoor Worker)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary : Recreator (Outdoor Worker)

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Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Recreator (Outdoor Worker)

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Pb-210	1.000E+00
Thickness:	2.00 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	1.000E+00
		Th-230	1.000E+00
		U-234	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.182E+00	2.177E+00	2.167E+00	2.131E+00	2.034E+00	1.733E+00	1.138E+00	4.585E-01
M(t):	1.818E-01	1.814E-01	1.806E-01	1.776E-01	1.695E-01	1.444E-01	9.481E-02	3.821E-02

Maximum TDOSE(t): 2.182E+00 mrem/yr at t = 0.000E+00 years

Summary : Recreator (Outdoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.515E-03	0.0007	1.512E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.380E-02	0.0109
Po-210	5.117E-06	0.0000	3.713E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.872E-03	0.0045
Ra-226	2.077E+00	0.9516	1.838E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.349E-03	0.0025
Th-230	6.749E-04	0.0003	1.937E-02	0.0089	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.826E-03	0.0018
U-234	7.237E-05	0.0000	1.790E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.824E-04	0.0004
U-238	3.233E-02	0.0148	1.529E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.559E-04	0.0004
Total	2.111E+00	0.9675	2.641E-02	0.0121	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.459E-02	0.0204

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.683E-02	0.0123
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.025E-02	0.0047
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.084E+00	0.9549
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.387E-02	0.0109
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.745E-03	0.0013
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.472E-02	0.0159
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.182E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Outdoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.471E-03	0.0007	1.767E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.110E-02	0.0143
Po-210	8.081E-07	0.0000	5.864E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.559E-03	0.0007
Ra-226	2.071E+00	0.9512	1.886E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.228E-03	0.0029
Th-230	1.573E-03	0.0007	1.937E-02	0.0089	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.829E-03	0.0018
U-234	7.214E-05	0.0000	1.784E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.795E-04	0.0004
U-238	3.223E-02	0.0148	1.524E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.531E-04	0.0004
Total	2.106E+00	0.9675	2.639E-02	0.0121	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.445E-02	0.0204

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.433E-02	0.0158
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.618E-03	0.0007
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.079E+00	0.9550
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.477E-02	0.0114
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.736E-03	0.0013
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.460E-02	0.0159
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.177E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Outdoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.378E-03	0.0006	1.708E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.055E-02	0.0141
Po-210	2.014E-08	0.0000	1.462E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.886E-05	0.0000
Ra-226	2.059E+00	0.9504	1.984E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.137E-03	0.0038
Th-230	3.362E-03	0.0016	1.937E-02	0.0089	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.835E-03	0.0018
U-234	7.170E-05	0.0000	1.773E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.738E-04	0.0004
U-238	3.201E-02	0.0148	1.514E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.474E-04	0.0004
Total	2.096E+00	0.9674	2.635E-02	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.428E-02	0.0204

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.364E-02	0.0155
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.034E-05	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.069E+00	0.9551
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.657E-02	0.0123
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.718E-03	0.0013
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.437E-02	0.0159
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.167E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Outdoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	1.094E-03	0.0005	1.358E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.430E-02	0.0114
Po-210	4.925E-14	0.0000	3.574E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.502E-11	0.0000
Ra-226	2.019E+00	0.9475	2.276E-03	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.389E-02	0.0065
Th-230	9.546E-03	0.0045	1.938E-02	0.0091	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.869E-03	0.0018
U-234	7.047E-05	0.0000	1.733E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.540E-04	0.0004
U-238	3.128E-02	0.0147	1.479E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.280E-04	0.0004
Total	2.061E+00	0.9672	2.622E-02	0.0123	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.374E-02	0.0205

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.675E-02	0.0126
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.864E-11	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E+00	0.9551
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.279E-02	0.0154
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.657E-03	0.0012
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.359E-02	0.0158
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.131E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Outdoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	5.670E-04	0.0003	7.036E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.259E-02	0.0062
Po-210	4.561E-30	0.0000	3.310E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.799E-27	0.0000
Ra-226	1.910E+00	0.9388	2.754E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.391E-02	0.0118
Th-230	2.656E-02	0.0131	1.939E-02	0.0095	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.037E-03	0.0020
U-234	6.918E-05	0.0000	1.625E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.998E-04	0.0004
U-238	2.927E-02	0.0144	1.384E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.749E-04	0.0004
Total	1.966E+00	0.9666	2.586E-02	0.0127	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.211E-02	0.0207

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.386E-02	0.0068
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.134E-27	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.936E+00	0.9519
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.999E-02	0.0246
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.494E-03	0.0012
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.143E-02	0.0155
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.034E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Outdoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	5.673E-05	0.0000	7.040E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.260E-03	0.0007
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.569E+00	0.9056	2.790E-03	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.907E-02	0.0168
Th-230	7.910E-02	0.0456	1.946E-02	0.0112	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.896E-03	0.0028
U-234	8.625E-05	0.0000	1.299E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.364E-04	0.0004
U-238	2.320E-02	0.0134	1.097E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.143E-04	0.0004
Total	1.672E+00	0.9647	2.472E-02	0.0143	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.648E-02	0.0210

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.387E-03	0.0008
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.601E+00	0.9240
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.035E-01	0.0597
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.022E-03	0.0012
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.491E-02	0.0144
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.733E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Outdoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	7.895E-08	0.0000	9.797E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.753E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	8.953E-01	0.7870	1.633E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.733E-02	0.0152
Th-230	1.828E-01	0.1607	1.961E-02	0.0172	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.879E-03	0.0060
U-234	2.345E-04	0.0002	6.948E-04	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.357E-04	0.0003
U-238	1.195E-02	0.0105	5.654E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.165E-04	0.0003
Total	1.090E+00	0.9584	2.250E-02	0.0198	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.486E-02	0.0219

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.930E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.143E-01	0.8036
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.093E-01	0.1840
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.265E-03	0.0011
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.283E-02	0.0113
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.138E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Outdoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	7.940E-18	0.0000	9.853E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.763E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.255E-01	0.2737	2.289E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.429E-03	0.0053
Th-230	2.995E-01	0.6531	1.966E-02	0.0429	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.109E-03	0.0199
U-234	7.164E-04	0.0016	1.170E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.453E-05	0.0001
U-238	1.170E-03	0.0026	5.554E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.108E-05	0.0001
Total	4.268E-01	0.9309	2.006E-02	0.0437	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.162E-02	0.0254

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.941E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.282E-01	0.2795
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.282E-01	0.7158
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.880E-04	0.0019
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.257E-03	0.0027
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.585E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210+D	Pb-210+D	1.000E+00	1.487E-02	1.439E-02	1.347E-02	1.070E-02	5.544E-03	5.548E-04	7.721E-07	7.765E-17
Pb-210+D	Po-210	1.000E+00	1.196E-02	1.995E-02	2.016E-02	1.605E-02	8.315E-03	8.319E-04	1.158E-06	1.164E-16
Pb-210+D	ΣDSR(j)		2.683E-02	3.433E-02	3.364E-02	2.675E-02	1.386E-02	1.387E-03	1.930E-06	1.941E-16
Pb-210+D1	Pb-210+D1	1.320E-06	2.292E-08	2.218E-08	2.077E-08	1.650E-08	8.547E-09	8.552E-10	1.190E-12	1.197E-22
Pb-210+D2	Pb-210+D2	1.900E-08	2.611E-09	2.527E-09	2.366E-09	1.879E-09	9.736E-10	9.742E-11	1.356E-13	1.364E-23
Po-210	Po-210	1.000E+00	1.025E-02	1.618E-03	4.034E-05	9.864E-11	9.134E-27	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	9.996E-01	2.082E+00	2.076E+00	2.064E+00	2.024E+00	1.914E+00	1.572E+00	8.969E-01	1.257E-01
Ra-226+D	Pb-210+D	9.996E-01	2.331E-04	6.884E-04	1.551E-03	4.124E-03	8.645E-03	1.125E-02	6.747E-03	9.459E-04
Ra-226+D	Po-210	9.996E-01	1.414E-04	6.777E-04	1.947E-03	5.811E-03	1.261E-02	1.659E-02	9.953E-03	1.395E-03
Ra-226+D	ΣDSR(j)		2.082E+00	2.077E+00	2.068E+00	2.034E+00	1.935E+00	1.600E+00	9.136E-01	1.281E-01
Ra-226+D	Ra-226+D	1.319E-06	2.748E-06	2.740E-06	2.725E-06	2.672E-06	2.526E-06	2.076E-06	1.184E-06	1.660E-07
Ra-226+D	Pb-210+D1	1.319E-06	3.594E-10	1.061E-09	2.392E-09	6.357E-09	1.333E-08	1.735E-08	1.040E-08	1.458E-09
Ra-226+D	ΣDSR(j)		2.748E-06	2.741E-06	2.727E-06	2.678E-06	2.539E-06	2.093E-06	1.194E-06	1.674E-07
Ra-226+D	Ra-226+D	1.899E-08	3.956E-08	3.944E-08	3.922E-08	3.846E-08	3.636E-08	2.987E-08	1.704E-08	2.389E-09
Ra-226+D	Pb-210+D2	1.899E-08	4.093E-11	1.209E-10	2.724E-10	7.241E-10	1.518E-09	1.976E-09	1.185E-09	1.661E-10
Ra-226+D	ΣDSR(j)		3.960E-08	3.957E-08	3.950E-08	3.918E-08	3.788E-08	3.185E-08	1.823E-08	2.555E-09
Ra-226+D1	Ra-226+D1	2.100E-04	1.136E-03	1.133E-03	1.127E-03	1.105E-03	1.045E-03	8.583E-04	4.896E-04	6.863E-05
Ra-226+D1	Pb-210+D	2.100E-04	4.896E-08	1.446E-07	3.258E-07	8.662E-07	1.816E-06	2.364E-06	1.417E-06	1.987E-07
Ra-226+D1	Po-210	2.100E-04	2.969E-08	1.423E-07	4.090E-07	1.221E-06	2.649E-06	3.484E-06	2.091E-06	2.931E-07
Ra-226+D1	ΣDSR(j)		1.136E-03	1.133E-03	1.128E-03	1.107E-03	1.049E-03	8.641E-04	4.931E-04	6.912E-05
Ra-226+D1	Ra-226+D1	2.771E-10	1.500E-09	1.496E-09	1.487E-09	1.459E-09	1.379E-09	1.133E-09	6.462E-10	9.059E-11
Ra-226+D1	Pb-210+D1	2.771E-10	7.548E-14	2.229E-13	5.023E-13	1.335E-12	2.799E-12	3.644E-12	2.185E-12	3.063E-13
Ra-226+D1	ΣDSR(j)		1.500E-09	1.496E-09	1.488E-09	1.460E-09	1.382E-09	1.137E-09	6.484E-10	9.089E-11
Ra-226+D1	Ra-226+D1	3.989E-12	2.159E-11	2.153E-11	2.141E-11	2.099E-11	1.985E-11	1.631E-11	9.302E-12	1.304E-12
Ra-226+D1	Pb-210+D2	3.989E-12	8.598E-15	2.539E-14	5.722E-14	1.521E-13	3.189E-13	4.151E-13	2.489E-13	3.489E-14
Ra-226+D1	ΣDSR(j)		2.160E-11	2.156E-11	2.147E-11	2.115E-11	2.017E-11	1.672E-11	9.551E-12	1.339E-12
Ra-226+D2	Ra-226+D2	1.998E-04	3.656E-04	3.646E-04	3.626E-04	3.555E-04	3.361E-04	2.761E-04	1.575E-04	2.208E-05
Ra-226+D2	Pb-210+D	1.998E-04	4.658E-08	1.376E-07	3.100E-07	8.241E-07	1.728E-06	2.249E-06	1.348E-06	1.890E-07
Ra-226+D2	Po-210	1.998E-04	2.825E-08	1.354E-07	3.891E-07	1.161E-06	2.520E-06	3.315E-06	1.989E-06	2.788E-07
Ra-226+D2	ΣDSR(j)		3.657E-04	3.649E-04	3.633E-04	3.575E-04	3.403E-04	2.817E-04	1.609E-04	2.255E-05
Ra-226+D2	Ra-226+D2	2.637E-10	4.826E-10	4.813E-10	4.786E-10	4.693E-10	4.436E-10	3.645E-10	2.079E-10	2.915E-11
Ra-226+D2	Pb-210+D1	2.637E-10	7.181E-14	2.121E-13	4.779E-13	1.270E-12	2.663E-12	3.467E-12	2.079E-12	2.914E-13
Ra-226+D2	ΣDSR(j)		4.827E-10	4.815E-10	4.791E-10	4.705E-10	4.463E-10	3.680E-10	2.100E-10	2.944E-11

Summary : Recreator (Outdoor Worker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D2	Ra-226+D2	3.795E-12	6.947E-12	6.927E-12	6.889E-12	6.755E-12	6.386E-12	5.247E-12	2.993E-12	4.195E-13
Ra-226+D2	Pb-210+D2	3.795E-12	8.180E-15	2.416E-14	5.444E-14	1.447E-13	3.034E-13	3.949E-13	2.368E-13	3.319E-14
Ra-226+D2	ΣDSR(j)		6.955E-12	6.952E-12	6.943E-12	6.899E-12	6.689E-12	5.642E-12	3.230E-12	4.527E-13
Ra-226+D3	Ra-226+D3	4.196E-08	2.165E-07	2.159E-07	2.147E-07	2.105E-07	1.990E-07	1.635E-07	9.327E-08	1.307E-08
Ra-226+D3	Pb-210+D	4.196E-08	9.785E-12	2.889E-11	6.512E-11	1.731E-10	3.629E-10	4.724E-10	2.832E-10	3.970E-11
Ra-226+D3	Po-210	4.196E-08	5.934E-12	2.845E-11	8.173E-11	2.439E-10	5.294E-10	6.962E-10	4.178E-10	5.857E-11
Ra-226+D3	ΣDSR(j)		2.165E-07	2.160E-07	2.148E-07	2.109E-07	1.999E-07	1.647E-07	9.398E-08	1.317E-08
Ra-226+D3	Ra-226+D3	5.538E-14	2.858E-13	2.850E-13	2.834E-13	2.779E-13	2.627E-13	2.158E-13	1.231E-13	1.726E-14
Ra-226+D3	Pb-210+D1	5.538E-14	1.508E-17	4.454E-17	1.004E-16	2.668E-16	5.594E-16	7.282E-16	4.366E-16	6.121E-17
Ra-226+D3	ΣDSR(j)		2.858E-13	2.850E-13	2.835E-13	2.781E-13	2.633E-13	2.166E-13	1.236E-13	1.732E-14
Ra-226+D3	Ra-226+D3	7.972E-16	4.114E-15	4.102E-15	4.079E-15	4.000E-15	3.781E-15	3.107E-15	1.772E-15	2.484E-16
Ra-226+D3	Pb-210+D2	7.972E-16	1.718E-18	5.074E-18	1.143E-17	3.040E-17	6.372E-17	8.295E-17	4.973E-17	6.972E-18
Ra-226+D3	ΣDSR(j)		4.115E-15	4.107E-15	4.091E-15	4.030E-15	3.845E-15	3.190E-15	1.822E-15	2.554E-16
Ra-226+D4	Ra-226+D4	2.000E-07	2.918E-09	2.909E-09	2.893E-09	2.837E-09	2.682E-09	2.204E-09	1.257E-09	1.762E-10
Ra-226+D4	Pb-210+D	2.000E-07	4.664E-11	1.377E-10	3.104E-10	8.251E-10	1.730E-09	2.252E-09	1.350E-09	1.893E-10
Ra-226+D4	Po-210	2.000E-07	2.829E-11	1.356E-10	3.896E-10	1.163E-09	2.523E-09	3.319E-09	1.991E-09	2.792E-10
Ra-226+D4	ΣDSR(j)		2.992E-09	3.183E-09	3.593E-09	4.825E-09	6.935E-09	7.774E-09	4.598E-09	6.446E-10
Ra-226+D4	Ra-226+D4	2.640E-13	3.851E-15	3.840E-15	3.819E-15	3.745E-15	3.540E-15	2.909E-15	1.659E-15	2.326E-16
Ra-226+D4	Pb-210+D1	2.640E-13	7.190E-17	2.123E-16	4.785E-16	1.272E-15	2.666E-15	3.471E-15	2.081E-15	2.918E-16
Ra-226+D4	ΣDSR(j)		3.923E-15	4.053E-15	4.297E-15	5.017E-15	6.207E-15	6.380E-15	3.740E-15	5.243E-16
Ra-226+D4	Ra-226+D4	3.800E-15	5.543E-17	5.528E-17	5.497E-17	5.390E-17	5.096E-17	4.187E-17	2.388E-17	3.348E-18
Ra-226+D4	Pb-210+D2	3.800E-15	8.190E-18	2.419E-17	5.450E-17	1.449E-16	3.037E-16	3.954E-16	2.370E-16	3.323E-17
Ra-226+D4	ΣDSR(j)		6.362E-17	7.946E-17	1.095E-16	1.988E-16	3.547E-16	4.373E-16	2.609E-16	3.658E-17
Th-230	Th-230	9.996E-01	2.341E-02	2.341E-02	2.341E-02	2.341E-02	2.340E-02	2.338E-02	2.333E-02	2.313E-02
Th-230	Ra-226+D	9.996E-01	4.512E-04	1.352E-03	3.145E-03	9.344E-03	2.640E-02	7.904E-02	1.830E-01	2.998E-01
Th-230	Pb-210+D	9.996E-01	3.376E-08	2.339E-07	1.209E-06	9.979E-06	6.778E-05	3.958E-04	1.171E-03	2.051E-03
Th-230	Po-210	9.996E-01	1.655E-08	1.855E-07	1.323E-06	1.333E-05	9.687E-05	5.791E-04	1.722E-03	3.021E-03
Th-230	ΣDSR(j)		2.386E-02	2.476E-02	2.656E-02	3.277E-02	4.996E-02	1.034E-01	2.092E-01	3.280E-01
Th-230	Th-230	1.319E-06	3.090E-08	3.090E-08	3.090E-08	3.090E-08	3.089E-08	3.086E-08	3.079E-08	3.053E-08
Th-230	Ra-226+D	1.319E-06	5.955E-10	1.784E-09	4.152E-09	1.233E-08	3.484E-08	1.043E-07	2.415E-07	3.957E-07
Th-230	Pb-210+D1	1.319E-06	5.205E-14	3.607E-13	1.863E-12	1.538E-11	1.045E-10	6.101E-10	1.805E-09	3.162E-09
Th-230	ΣDSR(j)		3.150E-08	3.268E-08	3.505E-08	4.325E-08	6.584E-08	1.358E-07	2.741E-07	4.294E-07
Th-230	Th-230	1.899E-08	4.448E-10	4.448E-10	4.448E-10	4.447E-10	4.446E-10	4.442E-10	4.432E-10	4.395E-10
Th-230	Ra-226+D	1.899E-08	8.572E-12	2.568E-11	5.976E-11	1.775E-10	5.015E-10	1.502E-09	3.476E-09	5.696E-09
Th-230	Pb-210+D2	1.899E-08	5.929E-15	4.108E-14	2.122E-13	1.752E-12	1.190E-11	6.950E-11	2.055E-10	3.602E-10
Th-230	ΣDSR(j)		4.534E-10	4.705E-10	5.047E-10	6.240E-10	9.580E-10	2.015E-09	4.125E-09	6.496E-09

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.100E-04	4.917E-06	4.917E-06	4.917E-06	4.916E-06	4.915E-06	4.911E-06	4.899E-06	4.858E-06
Th-230	Ra-226+D1	2.100E-04	2.463E-07	7.379E-07	1.717E-06	5.101E-06	1.441E-05	4.314E-05	9.987E-05	1.636E-04
Th-230	Pb-210+D	2.100E-04	7.091E-12	4.914E-11	2.539E-10	2.096E-09	1.424E-08	8.313E-08	2.459E-07	4.309E-07
Th-230	Po-210	2.100E-04	3.476E-12	3.897E-11	2.780E-10	2.801E-09	2.035E-08	1.216E-07	3.617E-07	6.346E-07
Th-230	ΣDSR(j)		5.163E-06	5.655E-06	6.634E-06	1.002E-05	1.936E-05	4.826E-05	1.054E-04	1.696E-04
Th-230	Th-230	2.771E-10	6.490E-12	6.490E-12	6.490E-12	6.490E-12	6.488E-12	6.483E-12	6.467E-12	6.413E-12
Th-230	Ra-226+D1	2.771E-10	3.251E-13	9.740E-13	2.266E-12	6.733E-12	1.902E-11	5.695E-11	1.318E-10	2.160E-10
Th-230	Pb-210+D1	2.771E-10	1.093E-17	7.575E-17	3.914E-16	3.231E-15	2.195E-14	1.282E-13	3.790E-13	6.642E-13
Th-230	ΣDSR(j)		6.816E-12	7.464E-12	8.757E-12	1.323E-11	2.553E-11	6.356E-11	1.387E-10	2.231E-10
Th-230	Th-230	3.989E-12	9.342E-14	9.342E-14	9.342E-14	9.341E-14	9.339E-14	9.331E-14	9.309E-14	9.231E-14
Th-230	Ra-226+D1	3.989E-12	4.679E-15	1.402E-14	3.262E-14	9.691E-14	2.738E-13	8.197E-13	1.898E-12	3.109E-12
Th-230	Pb-210+D2	3.989E-12	1.245E-18	8.629E-18	4.458E-17	3.681E-16	2.500E-15	1.460E-14	4.317E-14	7.566E-14
Th-230	ΣDSR(j)		9.810E-14	1.075E-13	1.261E-13	1.907E-13	3.696E-13	9.276E-13	2.034E-12	3.277E-12
Th-230	Th-230	1.998E-04	4.678E-06	4.678E-06	4.678E-06	4.678E-06	4.676E-06	4.673E-06	4.661E-06	4.622E-06
Th-230	Ra-226+D2	1.998E-04	7.923E-08	2.374E-07	5.524E-07	1.641E-06	4.636E-06	1.388E-05	3.213E-05	5.265E-05
Th-230	Pb-210+D	1.998E-04	6.747E-12	4.675E-11	2.415E-10	1.994E-09	1.354E-08	7.909E-08	2.339E-07	4.099E-07
Th-230	Po-210	1.998E-04	3.307E-12	3.708E-11	2.645E-10	2.665E-09	1.936E-08	1.157E-07	3.441E-07	6.037E-07
Th-230	ΣDSR(j)		4.757E-06	4.916E-06	5.231E-06	6.323E-06	9.345E-06	1.875E-05	3.737E-05	5.829E-05
Th-230	Th-230	2.637E-10	6.175E-12	6.175E-12	6.175E-12	6.174E-12	6.173E-12	6.168E-12	6.153E-12	6.102E-12
Th-230	Ra-226+D2	2.637E-10	1.046E-13	3.134E-13	7.292E-13	2.166E-12	6.119E-12	1.832E-11	4.242E-11	6.950E-11
Th-230	Pb-210+D1	2.637E-10	1.040E-17	7.207E-17	3.724E-16	3.074E-15	2.088E-14	1.219E-13	3.606E-13	6.320E-13
Th-230	ΣDSR(j)		6.280E-12	6.489E-12	6.905E-12	8.344E-12	1.231E-11	2.461E-11	4.893E-11	7.623E-11
Th-230	Th-230	3.795E-12	8.888E-14	8.888E-14	8.888E-14	8.887E-14	8.885E-14	8.878E-14	8.857E-14	8.783E-14
Th-230	Ra-226+D2	3.795E-12	1.505E-15	4.511E-15	1.050E-14	3.118E-14	8.808E-14	2.637E-13	6.105E-13	1.000E-12
Th-230	Pb-210+D2	3.795E-12	1.185E-18	8.210E-18	4.241E-17	3.502E-16	2.378E-15	1.389E-14	4.108E-14	7.198E-14
Th-230	ΣDSR(j)		9.039E-14	9.340E-14	9.942E-14	1.204E-13	1.793E-13	3.664E-13	7.402E-13	1.160E-12
Th-230	Th-230	4.196E-08	9.826E-10	9.826E-10	9.826E-10	9.825E-10	9.823E-10	9.814E-10	9.791E-10	9.709E-10
Th-230	Ra-226+D3	4.196E-08	4.692E-11	1.406E-10	3.271E-10	9.718E-10	2.745E-09	8.220E-09	1.903E-08	3.118E-08
Th-230	Pb-210+D	4.196E-08	1.417E-15	9.820E-15	5.073E-14	4.189E-13	2.845E-12	1.661E-11	4.913E-11	8.610E-11
Th-230	Po-210	4.196E-08	6.947E-16	7.788E-15	5.555E-14	5.597E-13	4.066E-12	2.431E-11	7.227E-11	1.268E-10
Th-230	ΣDSR(j)		1.030E-09	1.123E-09	1.310E-09	1.955E-09	3.734E-09	9.242E-09	2.013E-08	3.236E-08
Th-230	Th-230	5.538E-14	1.297E-15	1.297E-15	1.297E-15	1.297E-15	1.297E-15	1.296E-15	1.292E-15	1.282E-15
Th-230	Ra-226+D3	5.538E-14	6.193E-17	1.856E-16	4.318E-16	1.283E-15	3.623E-15	1.085E-14	2.512E-14	4.116E-14
Th-230	Pb-210+D1	5.538E-14	2.185E-21	1.514E-20	7.821E-20	6.457E-19	4.386E-18	2.561E-17	7.575E-17	1.327E-16
Th-230	ΣDSR(j)		1.359E-15	1.483E-15	1.729E-15	2.580E-15	4.924E-15	1.217E-14	2.648E-14	4.257E-14
Th-230	Th-230	7.972E-16	1.867E-17	1.867E-17	1.867E-17	1.867E-17	1.866E-17	1.865E-17	1.860E-17	1.845E-17
Th-230	Ra-226+D3	7.972E-16	8.915E-19	2.671E-18	6.215E-18	1.846E-17	5.216E-17	1.562E-16	3.615E-16	5.924E-16
Th-230	Pb-210+D2	7.972E-16	2.489E-22	1.724E-21	8.909E-21	7.355E-20	4.996E-19	2.917E-18	8.628E-18	1.512E-17
Th-230	ΣDSR(j)		1.956E-17	2.134E-17	2.489E-17	3.720E-17	7.132E-17	1.777E-16	3.888E-16	6.260E-16

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.000E-07	4.684E-09	4.684E-09	4.684E-09	4.683E-09	4.682E-09	4.678E-09	4.667E-09	4.628E-09
Th-230	Ra-226+D4	2.000E-07	6.323E-13	1.894E-12	4.408E-12	1.310E-11	3.699E-11	1.108E-10	2.564E-10	4.202E-10
Th-230	Pb-210+D	2.000E-07	6.755E-15	4.681E-14	2.418E-13	1.997E-12	1.356E-11	7.919E-11	2.342E-10	4.104E-10
Th-230	Po-210	2.000E-07	3.311E-15	3.712E-14	2.648E-13	2.668E-12	1.938E-11	1.159E-10	3.445E-10	6.045E-10
Th-230	ΣDSR(j)		4.684E-09	4.686E-09	4.689E-09	4.701E-09	4.752E-09	4.984E-09	5.502E-09	6.063E-09
Th-230	Th-230	2.640E-13	6.183E-15	6.183E-15	6.182E-15	6.182E-15	6.180E-15	6.175E-15	6.160E-15	6.109E-15
Th-230	Ra-226+D4	2.640E-13	8.346E-19	2.501E-18	5.819E-18	1.729E-17	4.883E-17	1.462E-16	3.385E-16	5.546E-16
Th-230	Pb-210+D1	2.640E-13	1.041E-20	7.216E-20	3.728E-19	3.078E-18	2.091E-17	1.221E-16	3.611E-16	6.327E-16
Th-230	ΣDSR(j)		6.183E-15	6.185E-15	6.189E-15	6.202E-15	6.250E-15	6.444E-15	6.860E-15	7.296E-15
Th-230	Th-230	3.800E-15	8.899E-17	8.899E-17	8.899E-17	8.898E-17	8.896E-17	8.889E-17	8.867E-17	8.793E-17
Th-230	Ra-226+D4	3.800E-15	1.201E-20	3.599E-20	8.375E-20	2.488E-19	7.028E-19	2.105E-18	4.872E-18	7.983E-18
Th-230	Pb-210+D2	3.800E-15	1.186E-21	8.220E-21	4.247E-20	3.506E-19	2.381E-18	1.391E-17	4.113E-17	7.207E-17
Th-230	ΣDSR(j)		8.901E-17	8.904E-17	8.912E-17	8.958E-17	9.204E-17	1.049E-16	1.347E-16	1.680E-16
U-234	U-234	9.996E-01	2.743E-03	2.734E-03	2.716E-03	2.654E-03	2.483E-03	1.968E-03	1.013E-03	9.899E-05
U-234	Th-230	9.996E-01	1.075E-07	3.221E-07	7.490E-07	2.221E-06	6.243E-06	1.838E-05	4.083E-05	6.192E-05
U-234	Ra-226+D	9.996E-01	1.382E-09	9.657E-09	5.084E-08	4.484E-07	3.630E-06	3.424E-05	2.078E-04	7.146E-04
U-234	Pb-210+D	9.996E-01	7.770E-14	1.156E-12	1.324E-11	3.286E-10	6.707E-09	1.389E-07	1.226E-06	4.832E-06
U-234	Po-210	9.996E-01	3.206E-14	7.797E-13	1.293E-11	4.183E-10	9.413E-09	2.021E-07	1.801E-06	7.114E-06
U-234	ΣDSR(j)		2.743E-03	2.735E-03	2.717E-03	2.656E-03	2.493E-03	2.021E-03	1.264E-03	8.874E-04
U-234	U-234	1.319E-06	3.621E-09	3.609E-09	3.585E-09	3.503E-09	3.278E-09	2.598E-09	1.337E-09	1.307E-10
U-234	Th-230	1.319E-06	1.419E-13	4.251E-13	9.887E-13	2.932E-12	8.240E-12	2.426E-11	5.390E-11	8.173E-11
U-234	Ra-226+D	1.319E-06	1.824E-15	1.275E-14	6.711E-14	5.919E-13	4.792E-12	4.519E-11	2.743E-10	9.432E-10
U-234	Pb-210+D1	1.319E-06	1.198E-19	1.782E-18	2.041E-17	5.066E-16	1.034E-14	2.142E-13	1.890E-12	7.449E-12
U-234	ΣDSR(j)		3.621E-09	3.610E-09	3.586E-09	3.506E-09	3.291E-09	2.667E-09	1.667E-09	1.163E-09
U-234	U-234	1.899E-08	5.212E-11	5.195E-11	5.161E-11	5.042E-11	4.718E-11	3.739E-11	1.924E-11	1.881E-12
U-234	Th-230	1.899E-08	2.043E-15	6.119E-15	1.423E-14	4.220E-14	1.186E-13	3.492E-13	7.758E-13	1.176E-12
U-234	Ra-226+D	1.899E-08	2.626E-17	1.835E-16	9.660E-16	8.520E-15	6.897E-14	6.505E-13	3.948E-12	1.358E-11
U-234	Pb-210+D2	1.899E-08	1.364E-20	2.030E-19	2.325E-18	5.770E-17	1.178E-15	2.440E-14	2.153E-13	8.484E-13
U-234	ΣDSR(j)		5.213E-11	5.196E-11	5.162E-11	5.047E-11	4.737E-11	3.841E-11	2.418E-11	1.748E-11
U-234	U-234	2.100E-04	5.762E-07	5.743E-07	5.705E-07	5.574E-07	5.216E-07	4.134E-07	2.127E-07	2.079E-08
U-234	Th-230	2.100E-04	2.258E-11	6.765E-11	1.573E-10	4.665E-10	1.311E-09	3.861E-09	8.577E-09	1.301E-08
U-234	Ra-226+D1	2.100E-04	7.544E-13	5.271E-12	2.775E-11	2.448E-10	1.982E-09	1.869E-08	1.134E-07	3.900E-07
U-234	Pb-210+D	2.100E-04	1.632E-17	2.428E-16	2.780E-15	6.902E-14	1.409E-12	2.919E-11	2.576E-10	1.015E-09
U-234	Po-210	2.100E-04	6.735E-18	1.638E-16	2.716E-15	8.787E-14	1.977E-12	4.246E-11	3.783E-10	1.494E-09
U-234	ΣDSR(j)		5.762E-07	5.744E-07	5.707E-07	5.581E-07	5.249E-07	4.360E-07	3.353E-07	4.264E-07
U-234	U-234	2.771E-10	7.606E-13	7.581E-13	7.531E-13	7.358E-13	6.885E-13	5.456E-13	2.808E-13	2.744E-14
U-234	Th-230	2.771E-10	2.981E-17	8.929E-17	2.077E-16	6.158E-16	1.731E-15	5.096E-15	1.132E-14	1.717E-14
U-234	Ra-226+D1	2.771E-10	9.958E-19	6.958E-18	3.663E-17	3.231E-16	2.616E-15	2.467E-14	1.497E-13	5.149E-13
U-234	Pb-210+D1	2.771E-10	2.516E-23	3.743E-22	4.286E-21	1.064E-19	2.172E-18	4.499E-17	3.971E-16	1.565E-15
U-234	ΣDSR(j)		7.606E-13	7.582E-13	7.533E-13	7.367E-13	6.928E-13	5.754E-13	4.422E-13	5.610E-13

Summary : Recreator (Outdoor Worker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	3.989E-12	1.095E-14	1.091E-14	1.084E-14	1.059E-14	9.910E-15	7.854E-15	4.041E-15	3.950E-16
U-234	Th-230	3.989E-12	4.291E-19	1.285E-18	2.989E-18	8.864E-18	2.491E-17	7.336E-17	1.630E-16	2.471E-16
U-234	Ra-226+D1	3.989E-12	1.433E-20	1.002E-19	5.273E-19	4.651E-18	3.765E-17	3.551E-16	2.155E-15	7.411E-15
U-234	Pb-210+D2	3.989E-12	2.866E-24	4.263E-23	4.883E-22	1.212E-20	2.474E-19	5.125E-18	4.523E-17	1.782E-16
U-234	ΣDSR(j)		1.095E-14	1.091E-14	1.084E-14	1.060E-14	9.973E-15	8.287E-15	6.404E-15	8.231E-15
U-234	U-234	1.998E-04	5.482E-07	5.464E-07	5.428E-07	5.303E-07	4.962E-07	3.933E-07	2.024E-07	1.978E-08
U-234	Th-230	1.998E-04	2.148E-11	6.436E-11	1.497E-10	4.439E-10	1.248E-09	3.673E-09	8.160E-09	1.237E-08
U-234	Ra-226+D2	1.998E-04	2.427E-13	1.696E-12	8.929E-12	7.875E-11	6.376E-10	6.013E-09	3.649E-08	1.255E-07
U-234	Pb-210+D	1.998E-04	1.553E-17	2.310E-16	2.645E-15	6.567E-14	1.340E-12	2.777E-11	2.451E-10	9.656E-10
U-234	Po-210	1.998E-04	6.407E-18	1.558E-16	2.584E-15	8.360E-14	1.881E-12	4.040E-11	3.599E-10	1.422E-09
U-234	ΣDSR(j)		5.483E-07	5.465E-07	5.430E-07	5.308E-07	4.981E-07	4.030E-07	2.476E-07	1.600E-07
U-234	U-234	2.637E-10	7.237E-13	7.213E-13	7.165E-13	7.000E-13	6.550E-13	5.191E-13	2.671E-13	2.611E-14
U-234	Th-230	2.637E-10	2.836E-17	8.495E-17	1.976E-16	5.859E-16	1.647E-15	4.849E-15	1.077E-14	1.633E-14
U-234	Ra-226+D2	2.637E-10	3.204E-19	2.239E-18	1.179E-17	1.040E-16	8.416E-16	7.937E-15	4.817E-14	1.657E-13
U-234	Pb-210+D1	2.637E-10	2.394E-23	3.561E-22	4.078E-21	1.012E-19	2.066E-18	4.281E-17	3.778E-16	1.489E-15
U-234	ΣDSR(j)		7.237E-13	7.214E-13	7.167E-13	7.007E-13	6.575E-13	5.319E-13	3.264E-13	2.096E-13
U-234	U-234	3.795E-12	1.042E-14	1.038E-14	1.031E-14	1.008E-14	9.428E-15	7.472E-15	3.845E-15	3.758E-16
U-234	Th-230	3.795E-12	4.082E-19	1.223E-18	2.844E-18	8.433E-18	2.370E-17	6.979E-17	1.550E-16	2.351E-16
U-234	Ra-226+D2	3.795E-12	4.612E-21	3.223E-20	1.697E-19	1.496E-18	1.211E-17	1.142E-16	6.933E-16	2.384E-15
U-234	Pb-210+D2	3.795E-12	2.727E-24	4.056E-23	4.645E-22	1.153E-20	2.354E-19	4.876E-18	4.303E-17	1.696E-16
U-234	ΣDSR(j)		1.042E-14	1.038E-14	1.032E-14	1.009E-14	9.464E-15	7.661E-15	4.736E-15	3.165E-15
U-234	U-234	4.196E-08	1.152E-10	1.148E-10	1.140E-10	1.114E-10	1.042E-10	8.260E-11	4.251E-11	4.155E-12
U-234	Th-230	4.196E-08	4.513E-15	1.352E-14	3.144E-14	9.323E-14	2.620E-13	7.716E-13	1.714E-12	2.599E-12
U-234	Ra-226+D3	4.196E-08	1.437E-16	1.004E-15	5.288E-15	4.663E-14	3.775E-13	3.560E-12	2.161E-11	7.431E-11
U-234	Pb-210+D	4.196E-08	3.261E-21	4.852E-20	5.556E-19	1.379E-17	2.815E-16	5.832E-15	5.147E-14	2.028E-13
U-234	Po-210	4.196E-08	1.346E-21	3.273E-20	5.427E-19	1.756E-17	3.951E-16	8.485E-15	7.559E-14	2.986E-13
U-234	ΣDSR(j)		1.152E-10	1.148E-10	1.140E-10	1.115E-10	1.049E-10	8.695E-11	6.596E-11	8.157E-11
U-234	U-234	5.538E-14	1.520E-16	1.515E-16	1.505E-16	1.470E-16	1.376E-16	1.090E-16	5.611E-17	5.485E-18
U-234	Th-230	5.538E-14	5.957E-21	1.784E-20	4.150E-20	1.231E-19	3.459E-19	1.018E-18	2.262E-18	3.431E-18
U-234	Ra-226+D3	5.538E-14	1.897E-22	1.326E-21	6.980E-21	6.156E-20	4.983E-19	4.700E-18	2.852E-17	9.809E-17
U-234	Pb-210+D1	5.538E-14	5.028E-27	7.480E-26	8.566E-25	2.126E-23	4.340E-22	8.991E-21	7.935E-20	3.127E-19
U-234	ΣDSR(j)		1.520E-16	1.515E-16	1.505E-16	1.472E-16	1.384E-16	1.148E-16	8.697E-17	1.073E-16
U-234	U-234	7.972E-16	2.188E-18	2.181E-18	2.166E-18	2.116E-18	1.980E-18	1.569E-18	8.076E-19	7.894E-20
U-234	Th-230	7.972E-16	8.574E-23	2.568E-22	5.974E-22	1.771E-21	4.979E-21	1.466E-20	3.257E-20	4.938E-20
U-234	Ra-226+D3	7.972E-16	2.731E-24	1.908E-23	1.005E-22	8.860E-22	7.173E-21	6.765E-20	4.105E-19	1.412E-18
U-234	Pb-210+D2	7.972E-16	5.727E-28	8.520E-27	9.757E-26	2.422E-24	4.943E-23	1.024E-21	9.039E-21	3.561E-20
U-234	ΣDSR(j)		2.188E-18	2.181E-18	2.167E-18	2.119E-18	1.993E-18	1.653E-18	1.260E-18	1.576E-18

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.000E-07	5.489E-10	5.471E-10	5.435E-10	5.310E-10	4.968E-10	3.937E-10	2.026E-10	1.981E-11
U-234	Th-230	2.000E-07	2.151E-14	6.444E-14	1.499E-13	4.444E-13	1.249E-12	3.678E-12	8.170E-12	1.239E-11
U-234	Ra-226+D4	2.000E-07	1.937E-18	1.353E-17	7.125E-17	6.284E-16	5.087E-15	4.798E-14	2.912E-13	1.001E-12
U-234	Pb-210+D	2.000E-07	1.555E-20	2.313E-19	2.649E-18	6.575E-17	1.342E-15	2.780E-14	2.454E-13	9.667E-13
U-234	Po-210	2.000E-07	6.415E-21	1.560E-19	2.587E-18	8.370E-17	1.883E-15	4.044E-14	3.603E-13	1.423E-12
U-234	ΣDSR(j)		5.489E-10	5.471E-10	5.436E-10	5.314E-10	4.981E-10	3.975E-10	2.117E-10	3.559E-11
U-234	U-234	2.640E-13	7.245E-16	7.221E-16	7.174E-16	7.009E-16	6.558E-16	5.197E-16	2.675E-16	2.614E-17
U-234	Th-230	2.640E-13	2.839E-20	8.506E-20	1.978E-19	5.866E-19	1.649E-18	4.855E-18	1.078E-17	1.635E-17
U-234	Ra-226+D4	2.640E-13	2.557E-24	1.786E-23	9.405E-23	8.295E-22	6.715E-21	6.333E-20	3.843E-19	1.322E-18
U-234	Pb-210+D1	2.640E-13	2.397E-26	3.565E-25	4.083E-24	1.014E-22	2.069E-21	4.286E-20	3.782E-19	1.490E-18
U-234	ΣDSR(j)		7.246E-16	7.222E-16	7.176E-16	7.015E-16	6.575E-16	5.247E-16	2.790E-16	4.531E-17
U-234	U-234	3.800E-15	1.043E-17	1.039E-17	1.033E-17	1.009E-17	9.440E-18	7.481E-18	3.850E-18	3.763E-19
U-234	Th-230	3.800E-15	4.087E-22	1.224E-21	2.847E-21	8.444E-21	2.373E-20	6.988E-20	1.552E-19	2.354E-19
U-234	Ra-226+D4	3.800E-15	3.680E-26	2.571E-25	1.354E-24	1.194E-23	9.666E-23	9.116E-22	5.532E-21	1.903E-20
U-234	Pb-210+D2	3.800E-15	2.730E-27	4.061E-26	4.651E-25	1.155E-23	2.356E-22	4.882E-21	4.308E-20	1.698E-19
U-234	ΣDSR(j)		1.043E-17	1.040E-17	1.033E-17	1.010E-17	9.464E-18	7.557E-18	4.054E-18	8.005E-19
U-238	U-238	5.450E-07	1.285E-09	1.281E-09	1.272E-09	1.243E-09	1.163E-09	9.221E-10	4.748E-10	4.650E-11
U-238+D	U-238+D	1.599E-03	2.675E-03	2.666E-03	2.649E-03	2.588E-03	2.422E-03	1.920E-03	9.883E-04	9.680E-05
U-238+D	U-234	1.599E-03	6.193E-12	1.852E-11	4.294E-11	1.259E-10	3.421E-10	8.936E-10	1.375E-09	4.480E-10
U-238+D	Th-230	1.599E-03	1.618E-16	1.130E-15	5.950E-15	5.241E-14	4.229E-13	3.942E-12	2.320E-11	7.396E-11
U-238+D	Ra-226+D	1.599E-03	1.560E-18	2.336E-17	2.713E-16	7.077E-15	1.651E-13	5.014E-12	8.487E-11	7.312E-10
U-238+D	Pb-210+D	1.599E-03	7.026E-23	2.162E-21	5.361E-20	3.956E-18	2.392E-16	1.715E-14	4.622E-13	4.858E-12
U-238+D	Po-210	1.599E-03	2.507E-23	1.279E-21	4.741E-20	4.812E-18	3.298E-16	2.481E-14	6.776E-13	7.151E-12
U-238+D	ΣDSR(j)		2.675E-03	2.666E-03	2.649E-03	2.588E-03	2.422E-03	1.920E-03	9.883E-04	9.680E-05
U-238+D	U-238+D	2.111E-09	3.531E-09	3.519E-09	3.496E-09	3.416E-09	3.196E-09	2.534E-09	1.305E-09	1.278E-10
U-238+D	U-234	2.111E-09	8.175E-18	2.445E-17	5.668E-17	1.662E-16	4.516E-16	1.180E-15	1.815E-15	5.914E-16
U-238+D	Th-230	2.111E-09	2.136E-22	1.492E-21	7.854E-21	6.918E-20	5.582E-19	5.203E-18	3.063E-17	9.763E-17
U-238+D	Ra-226+D	2.111E-09	2.060E-24	3.083E-23	3.581E-22	9.341E-21	2.180E-19	6.619E-18	1.120E-16	9.651E-16
U-238+D	Pb-210+D1	2.111E-09	1.083E-28	3.333E-27	8.264E-26	6.099E-24	3.687E-22	2.643E-20	7.125E-19	7.489E-18
U-238+D	ΣDSR(j)		3.531E-09	3.519E-09	3.496E-09	3.416E-09	3.196E-09	2.534E-09	1.305E-09	1.278E-10
U-238+D	U-238+D	3.039E-11	5.083E-11	5.066E-11	5.032E-11	4.917E-11	4.601E-11	3.647E-11	1.878E-11	1.839E-12
U-238+D	U-234	3.039E-11	1.177E-19	3.520E-19	8.159E-19	2.392E-18	6.501E-18	1.698E-17	2.613E-17	8.512E-18
U-238+D	Th-230	3.039E-11	3.074E-24	2.148E-23	1.130E-22	9.958E-22	8.035E-21	7.490E-20	4.408E-19	1.405E-18
U-238+D	Ra-226+D	3.039E-11	2.965E-26	4.438E-25	5.154E-24	1.345E-22	3.138E-21	9.527E-20	1.613E-18	1.389E-17
U-238+D	Pb-210+D2	3.039E-11	1.234E-29	3.797E-28	9.414E-27	6.947E-25	4.200E-23	3.011E-21	8.116E-20	8.531E-19
U-238+D	ΣDSR(j)		5.083E-11	5.066E-11	5.032E-11	4.917E-11	4.601E-11	3.647E-11	1.878E-11	1.839E-12

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	3.359E-07	5.619E-07	5.600E-07	5.563E-07	5.435E-07	5.086E-07	4.032E-07	2.076E-07	2.033E-08
U-238+D	U-234	3.359E-07	1.301E-15	3.891E-15	9.020E-15	2.644E-14	7.187E-14	1.877E-13	2.889E-13	9.410E-14
U-238+D	Th-230	3.359E-07	3.399E-20	2.374E-19	1.250E-18	1.101E-17	8.882E-17	8.280E-16	4.873E-15	1.554E-14
U-238+D	Ra-226+D1	3.359E-07	8.517E-22	1.275E-20	1.481E-19	3.863E-18	9.014E-17	2.737E-15	4.633E-14	3.991E-13
U-238+D	Pb-210+D	3.359E-07	1.476E-26	4.542E-25	1.126E-23	8.310E-22	5.024E-20	3.602E-18	9.708E-17	1.020E-15
U-238+D	Po-210	3.359E-07	5.266E-27	2.687E-25	9.957E-24	1.011E-21	6.928E-20	5.211E-18	1.423E-16	1.502E-15
U-238+D	ΣDSR(j)		5.619E-07	5.600E-07	5.563E-07	5.435E-07	5.086E-07	4.032E-07	2.076E-07	2.033E-08
U-238+D	U-238+D	4.434E-13	7.417E-13	7.392E-13	7.344E-13	7.175E-13	6.714E-13	5.322E-13	2.740E-13	2.684E-14
U-238+D	U-234	4.434E-13	1.717E-21	5.136E-21	1.191E-20	3.490E-20	9.486E-20	2.478E-19	3.813E-19	1.242E-19
U-238+D	Th-230	4.434E-13	4.486E-26	3.134E-25	1.650E-24	1.453E-23	1.172E-22	1.093E-21	6.433E-21	2.051E-20
U-238+D	Ra-226+D1	4.434E-13	1.124E-27	1.683E-26	1.955E-25	5.099E-24	1.190E-22	3.613E-21	6.115E-20	5.268E-19
U-238+D	Pb-210+D1	4.434E-13	2.275E-32	7.002E-31	1.736E-29	1.281E-27	7.745E-26	5.552E-24	1.497E-22	1.573E-21
U-238+D	ΣDSR(j)		7.417E-13	7.392E-13	7.344E-13	7.175E-13	6.714E-13	5.322E-13	2.740E-13	2.684E-14
U-238+D	U-238+D	6.383E-15	1.068E-14	1.064E-14	1.057E-14	1.033E-14	9.664E-15	7.661E-15	3.944E-15	3.863E-16
U-238+D	U-234	6.383E-15	2.472E-23	7.393E-23	1.714E-22	5.023E-22	1.365E-21	3.566E-21	5.489E-21	1.788E-21
U-238+D	Th-230	6.383E-15	6.457E-28	4.512E-27	2.374E-26	2.092E-25	1.688E-24	1.573E-23	9.259E-23	2.952E-22
U-238+D	Ra-226+D1	6.383E-15	1.618E-29	2.422E-28	2.813E-27	7.339E-26	1.713E-24	5.200E-23	8.802E-22	7.583E-21
U-238+D	Pb-210+D2	6.383E-15	2.592E-33	7.975E-32	1.977E-30	1.459E-28	8.822E-27	6.325E-25	1.705E-23	1.792E-22
U-238+D	ΣDSR(j)		1.068E-14	1.064E-14	1.057E-14	1.033E-14	9.664E-15	7.661E-15	3.944E-15	3.863E-16
U-238+D	U-238+D	3.196E-07	5.346E-07	5.328E-07	5.293E-07	5.171E-07	4.839E-07	3.836E-07	1.975E-07	1.934E-08
U-238+D	U-234	3.196E-07	1.238E-15	3.702E-15	8.582E-15	2.515E-14	6.837E-14	1.786E-13	2.748E-13	8.953E-14
U-238+D	Th-230	3.196E-07	3.233E-20	2.259E-19	1.189E-18	1.047E-17	8.451E-17	7.878E-16	4.637E-15	1.478E-14
U-238+D	Ra-226+D2	3.196E-07	2.740E-22	4.102E-21	4.764E-20	1.243E-18	2.900E-17	8.806E-16	1.490E-14	1.284E-13
U-238+D	Pb-210+D	3.196E-07	1.404E-26	4.321E-25	1.071E-23	7.906E-22	4.780E-20	3.427E-18	9.236E-17	9.708E-16
U-238+D	Po-210	3.196E-07	5.010E-27	2.556E-25	9.473E-24	9.616E-22	6.592E-20	4.957E-18	1.354E-16	1.429E-15
U-238+D	ΣDSR(j)		5.346E-07	5.328E-07	5.293E-07	5.171E-07	4.839E-07	3.836E-07	1.975E-07	1.934E-08
U-238+D	U-238+D	4.219E-13	7.057E-13	7.033E-13	6.987E-13	6.826E-13	6.388E-13	5.064E-13	2.607E-13	2.553E-14
U-238+D	U-234	4.219E-13	1.634E-21	4.887E-21	1.133E-20	3.320E-20	9.025E-20	2.357E-19	3.628E-19	1.182E-19
U-238+D	Th-230	4.219E-13	4.268E-26	2.982E-25	1.569E-24	1.383E-23	1.115E-22	1.040E-21	6.120E-21	1.951E-20
U-238+D	Ra-226+D2	4.219E-13	3.617E-28	5.415E-27	6.289E-26	1.641E-24	3.828E-23	1.162E-21	1.967E-20	1.695E-19
U-238+D	Pb-210+D1	4.219E-13	2.165E-32	6.661E-31	1.652E-29	1.219E-27	7.368E-26	5.283E-24	1.424E-22	1.497E-21
U-238+D	ΣDSR(j)		7.057E-13	7.033E-13	6.987E-13	6.826E-13	6.388E-13	5.064E-13	2.607E-13	2.553E-14
U-238+D	U-238+D	6.073E-15	1.016E-14	1.012E-14	1.006E-14	9.826E-15	9.195E-15	7.288E-15	3.753E-15	3.675E-16
U-238+D	U-234	6.073E-15	2.351E-23	7.034E-23	1.630E-22	4.779E-22	1.299E-21	3.393E-21	5.222E-21	1.701E-21
U-238+D	Th-230	6.073E-15	6.144E-28	4.292E-27	2.259E-26	1.990E-25	1.606E-24	1.497E-23	8.809E-23	2.808E-22
U-238+D	Ra-226+D2	6.073E-15	5.206E-30	7.794E-29	9.052E-28	2.361E-26	5.510E-25	1.673E-23	2.832E-22	2.440E-21
U-238+D	Pb-210+D2	6.073E-15	2.466E-33	7.588E-32	1.881E-30	1.388E-28	8.393E-27	6.017E-25	1.622E-23	1.705E-22
U-238+D	ΣDSR(j)		1.016E-14	1.012E-14	1.006E-14	9.826E-15	9.195E-15	7.288E-15	3.753E-15	3.675E-16

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	6.713E-11	1.123E-10	1.119E-10	1.112E-10	1.086E-10	1.016E-10	8.057E-11	4.149E-11	4.063E-12
U-238+D	U-234	6.713E-11	2.600E-19	7.776E-19	1.802E-18	5.284E-18	1.436E-17	3.751E-17	5.773E-17	1.881E-17
U-238+D	Th-230	6.713E-11	6.792E-24	4.745E-23	2.497E-22	2.200E-21	1.775E-20	1.655E-19	9.739E-19	3.105E-18
U-238+D	Ra-226+D3	6.713E-11	1.623E-25	2.429E-24	2.821E-23	7.360E-22	1.717E-20	5.215E-19	8.826E-18	7.604E-17
U-238+D	Pb-210+D	6.713E-11	2.949E-30	9.076E-29	2.250E-27	1.661E-25	1.004E-23	7.198E-22	1.940E-20	2.039E-19
U-238+D	Po-210	6.713E-11	1.052E-30	5.369E-29	1.990E-27	2.020E-25	1.385E-23	1.041E-21	2.844E-20	3.002E-19
U-238+D	ΣDSR(j)		1.123E-10	1.119E-10	1.112E-10	1.086E-10	1.016E-10	8.057E-11	4.149E-11	4.063E-12
U-238+D	U-238+D	8.862E-17	1.482E-16	1.477E-16	1.468E-16	1.434E-16	1.342E-16	1.064E-16	5.476E-17	5.363E-18
U-238+D	U-234	8.862E-17	3.431E-25	1.026E-24	2.379E-24	6.974E-24	1.896E-23	4.951E-23	7.620E-23	2.482E-23
U-238+D	Th-230	8.862E-17	8.965E-30	6.264E-29	3.297E-28	2.904E-27	2.343E-26	2.184E-25	1.286E-24	4.098E-24
U-238+D	Ra-226+D3	8.862E-17	2.142E-31	3.206E-30	3.724E-29	9.715E-28	2.267E-26	6.883E-25	1.165E-23	1.004E-22
U-238+D	Pb-210+D1	8.862E-17	4.547E-36	1.399E-34	3.469E-33	2.560E-31	1.548E-29	1.110E-27	2.991E-26	3.144E-25
U-238+D	ΣDSR(j)		1.482E-16	1.477E-16	1.468E-16	1.434E-16	1.342E-16	1.064E-16	5.476E-17	5.363E-18
U-238+D	U-238+D	1.276E-18	2.133E-18	2.126E-18	2.112E-18	2.064E-18	1.931E-18	1.531E-18	7.882E-19	7.720E-20
U-238+D	U-234	1.276E-18	4.939E-27	1.477E-26	3.425E-26	1.004E-25	2.729E-25	7.127E-25	1.097E-24	3.573E-25
U-238+D	Th-230	1.276E-18	1.290E-31	9.016E-31	4.745E-30	4.180E-29	3.373E-28	3.144E-27	1.850E-26	5.899E-26
U-238+D	Ra-226+D3	1.276E-18	3.083E-33	4.615E-32	5.360E-31	1.398E-29	3.263E-28	9.908E-27	1.677E-25	1.445E-24
U-238+D	Pb-210+D2	1.276E-18	5.179E-37	1.594E-35	3.951E-34	2.916E-32	1.763E-30	1.264E-28	3.407E-27	3.581E-26
U-238+D	ΣDSR(j)		2.133E-18	2.126E-18	2.112E-18	2.064E-18	1.931E-18	1.531E-18	7.882E-19	7.720E-20
U-238+D	U-238+D	3.200E-10	5.352E-10	5.335E-10	5.299E-10	5.178E-10	4.845E-10	3.841E-10	1.977E-10	1.937E-11
U-238+D	U-234	3.200E-10	1.239E-18	3.706E-18	8.592E-18	2.518E-17	6.846E-17	1.788E-16	2.752E-16	8.964E-17
U-238+D	Th-230	3.200E-10	3.237E-23	2.262E-22	1.190E-21	1.049E-20	8.461E-20	7.887E-19	4.642E-18	1.480E-17
U-238+D	Ra-226+D4	3.200E-10	2.187E-27	3.273E-26	3.802E-25	9.917E-24	2.314E-22	7.027E-21	1.189E-19	1.025E-18
U-238+D	Pb-210+D	3.200E-10	1.406E-29	4.326E-28	1.073E-26	7.916E-25	4.785E-23	3.431E-21	9.248E-20	9.720E-19
U-238+D	Po-210	3.200E-10	5.017E-30	2.559E-28	9.485E-27	9.628E-25	6.600E-23	4.963E-21	1.356E-19	1.431E-18
U-238+D	ΣDSR(j)		5.352E-10	5.335E-10	5.299E-10	5.178E-10	4.845E-10	3.841E-10	1.977E-10	1.937E-11
U-238+D	U-238+D	4.224E-16	7.065E-16	7.042E-16	6.995E-16	6.835E-16	6.396E-16	5.070E-16	2.610E-16	2.556E-17
U-238+D	U-234	4.224E-16	1.636E-24	4.892E-24	1.134E-23	3.324E-23	9.036E-23	2.360E-22	3.632E-22	1.183E-22
U-238+D	Th-230	4.224E-16	4.273E-29	2.986E-28	1.571E-27	1.384E-26	1.117E-25	1.041E-24	6.128E-24	1.953E-23
U-238+D	Ra-226+D4	4.224E-16	2.886E-33	4.321E-32	5.018E-31	1.309E-29	3.055E-28	9.276E-27	1.570E-25	1.353E-24
U-238+D	Pb-210+D1	4.224E-16	2.167E-35	6.669E-34	1.654E-32	1.220E-30	7.377E-29	5.289E-27	1.426E-25	1.498E-24
U-238+D	ΣDSR(j)		7.065E-16	7.042E-16	6.995E-16	6.835E-16	6.396E-16	5.070E-16	2.610E-16	2.556E-17
U-238+D	U-238+D	6.080E-18	1.017E-17	1.014E-17	1.007E-17	9.838E-18	9.206E-18	7.297E-18	3.757E-18	3.680E-19
U-238+D	U-234	6.080E-18	2.354E-26	7.042E-26	1.632E-25	4.785E-25	1.301E-24	3.397E-24	5.228E-24	1.703E-24
U-238+D	Th-230	6.080E-18	6.151E-31	4.298E-30	2.262E-29	1.992E-28	1.608E-27	1.499E-26	8.820E-26	2.812E-25
U-238+D	Ra-226+D4	6.080E-18	4.155E-35	6.219E-34	7.223E-33	1.884E-31	4.397E-30	1.335E-28	2.260E-27	1.947E-26
U-238+D	Pb-210+D2	6.080E-18	2.469E-36	7.597E-35	1.884E-33	1.390E-31	8.403E-30	6.025E-28	1.624E-26	1.707E-25
U-238+D	ΣDSR(j)		1.017E-17	1.014E-17	1.007E-17	9.838E-18	9.206E-18	7.297E-18	3.757E-18	3.680E-19

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	9.980E-01	3.203E-02	3.192E-02	3.171E-02	3.098E-02	2.899E-02	2.298E-02	1.183E-02	1.159E-03
U-238+D1	U-234	9.980E-01	3.864E-09	1.156E-08	2.680E-08	7.854E-08	2.135E-07	5.576E-07	8.582E-07	2.796E-07
U-238+D1	Th-230	9.980E-01	1.010E-13	7.054E-13	3.713E-12	3.270E-11	2.639E-10	2.460E-09	1.448E-08	4.615E-08
U-238+D1	Ra-226+D	9.980E-01	9.736E-16	1.457E-14	1.693E-13	4.416E-12	1.030E-10	3.129E-09	5.296E-08	4.562E-07
U-238+D1	Pb-210+D	9.980E-01	4.384E-20	1.349E-18	3.345E-17	2.469E-15	1.492E-13	1.070E-11	2.884E-10	3.031E-09
U-238+D1	Po-210	9.980E-01	1.565E-20	7.981E-19	2.958E-17	3.003E-15	2.058E-13	1.548E-11	4.228E-10	4.462E-09
U-238+D1	ΣDSR(j)		3.203E-02	3.192E-02	3.171E-02	3.098E-02	2.899E-02	2.298E-02	1.183E-02	1.160E-03
U-238+D1	U-238+D1	1.317E-06	4.228E-08	4.214E-08	4.186E-08	4.090E-08	3.827E-08	3.034E-08	1.562E-08	1.530E-09
U-238+D1	U-234	1.317E-06	5.101E-15	1.526E-14	3.537E-14	1.037E-13	2.818E-13	7.360E-13	1.133E-12	3.690E-13
U-238+D1	Th-230	1.317E-06	1.333E-19	9.311E-19	4.901E-18	4.317E-17	3.483E-16	3.247E-15	1.911E-14	6.092E-14
U-238+D1	Ra-226+D	1.317E-06	1.285E-21	1.924E-20	2.234E-19	5.829E-18	1.360E-16	4.130E-15	6.990E-14	6.022E-13
U-238+D1	Pb-210+D1	1.317E-06	6.759E-26	2.080E-24	5.157E-23	3.806E-21	2.301E-19	1.650E-17	4.446E-16	4.673E-15
U-238+D1	ΣDSR(j)		4.228E-08	4.214E-08	4.186E-08	4.090E-08	3.827E-08	3.034E-08	1.562E-08	1.531E-09
U-238+D1	U-238+D1	1.896E-08	6.086E-10	6.065E-10	6.025E-10	5.887E-10	5.509E-10	4.367E-10	2.248E-10	2.202E-11
U-238+D1	U-234	1.896E-08	7.342E-17	2.196E-16	5.091E-16	1.492E-15	4.056E-15	1.059E-14	1.631E-14	5.312E-15
U-238+D1	Th-230	1.896E-08	1.918E-21	1.340E-20	7.054E-20	6.214E-19	5.014E-18	4.674E-17	2.751E-16	8.769E-16
U-238+D1	Ra-226+D	1.896E-08	1.850E-23	2.769E-22	3.216E-21	8.390E-20	1.958E-18	5.945E-17	1.006E-15	8.669E-15
U-238+D1	Pb-210+D2	1.896E-08	7.699E-27	2.369E-25	5.874E-24	4.335E-22	2.621E-20	1.879E-18	5.064E-17	5.323E-16
U-238+D1	ΣDSR(j)		6.086E-10	6.065E-10	6.025E-10	5.887E-10	5.509E-10	4.367E-10	2.249E-10	2.204E-11
U-238+D1	U-238+D1	2.096E-04	6.728E-06	6.705E-06	6.661E-06	6.508E-06	6.090E-06	4.827E-06	2.486E-06	2.434E-07
U-238+D1	U-234	2.096E-04	8.117E-13	2.428E-12	5.628E-12	1.650E-11	4.484E-11	1.171E-10	1.803E-10	5.872E-11
U-238+D1	Th-230	2.096E-04	2.121E-17	1.482E-16	7.798E-16	6.869E-15	5.542E-14	5.167E-13	3.041E-12	9.694E-12
U-238+D1	Ra-226+D1	2.096E-04	5.314E-19	7.956E-18	9.240E-17	2.410E-15	5.625E-14	1.708E-12	2.891E-11	2.490E-10
U-238+D1	Pb-210+D	2.096E-04	9.209E-24	2.834E-22	7.026E-21	5.185E-19	3.135E-17	2.247E-15	6.058E-14	6.367E-13
U-238+D1	Po-210	2.096E-04	3.286E-24	1.676E-22	6.213E-21	6.307E-19	4.323E-17	3.251E-15	8.881E-14	9.373E-13
U-238+D1	ΣDSR(j)		6.728E-06	6.705E-06	6.661E-06	6.508E-06	6.090E-06	4.828E-06	2.486E-06	2.438E-07
U-238+D1	U-238+D1	2.767E-10	8.880E-12	8.851E-12	8.792E-12	8.591E-12	8.039E-12	6.372E-12	3.281E-12	3.213E-13
U-238+D1	U-234	2.767E-10	1.071E-18	3.205E-18	7.429E-18	2.178E-17	5.919E-17	1.546E-16	2.379E-16	7.751E-17
U-238+D1	Th-230	2.767E-10	2.799E-23	1.956E-22	1.029E-21	9.068E-21	7.316E-20	6.820E-19	4.014E-18	1.280E-17
U-238+D1	Ra-226+D1	2.767E-10	7.015E-25	1.050E-23	1.220E-22	3.182E-21	7.425E-20	2.254E-18	3.816E-17	3.287E-16
U-238+D1	Pb-210+D1	2.767E-10	1.420E-29	4.369E-28	1.083E-26	7.994E-25	4.833E-23	3.465E-21	9.339E-20	9.816E-19
U-238+D1	ΣDSR(j)		8.880E-12	8.851E-12	8.792E-12	8.591E-12	8.039E-12	6.372E-12	3.281E-12	3.218E-13
U-238+D1	U-238+D1	3.983E-12	1.278E-13	1.274E-13	1.266E-13	1.237E-13	1.157E-13	9.172E-14	4.722E-14	4.625E-15
U-238+D1	U-234	3.983E-12	1.542E-20	4.613E-20	1.069E-19	3.135E-19	8.520E-19	2.225E-18	3.425E-18	1.116E-18
U-238+D1	Th-230	3.983E-12	4.029E-25	2.815E-24	1.482E-23	1.305E-22	1.053E-21	9.817E-21	5.778E-20	1.842E-19
U-238+D1	Ra-226+D1	3.983E-12	1.010E-26	1.512E-25	1.756E-24	4.580E-23	1.069E-21	3.245E-20	5.492E-19	4.732E-18
U-238+D1	Pb-210+D2	3.983E-12	1.617E-30	4.977E-29	1.234E-27	9.105E-26	5.505E-24	3.947E-22	1.064E-20	1.118E-19
U-238+D1	ΣDSR(j)		1.278E-13	1.274E-13	1.266E-13	1.237E-13	1.157E-13	9.172E-14	4.723E-14	4.631E-15

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.994E-04	6.401E-06	6.380E-06	6.337E-06	6.192E-06	5.794E-06	4.593E-06	2.365E-06	2.316E-07
U-238+D1	U-234	1.994E-04	7.723E-13	2.310E-12	5.355E-12	1.570E-11	4.267E-11	1.114E-10	1.715E-10	5.587E-11
U-238+D1	Th-230	1.994E-04	2.018E-17	1.410E-16	7.419E-16	6.536E-15	5.273E-14	4.916E-13	2.893E-12	9.223E-12
U-238+D1	Ra-226+D2	1.994E-04	1.710E-19	2.560E-18	2.973E-17	7.755E-16	1.810E-14	5.495E-13	9.301E-12	8.013E-11
U-238+D1	Pb-210+D	1.994E-04	8.762E-24	2.696E-22	6.685E-21	4.933E-19	2.983E-17	2.138E-15	5.764E-14	6.058E-13
U-238+D1	Po-210	1.994E-04	3.127E-24	1.595E-22	5.911E-21	6.001E-19	4.113E-17	3.093E-15	8.449E-14	8.917E-13
U-238+D1	ΣDSR(j)		6.401E-06	6.380E-06	6.337E-06	6.192E-06	5.794E-06	4.593E-06	2.365E-06	2.318E-07
U-238+D1	U-238+D1	2.633E-10	8.449E-12	8.421E-12	8.365E-12	8.173E-12	7.648E-12	6.063E-12	3.121E-12	3.057E-13
U-238+D1	U-234	2.633E-10	1.019E-18	3.049E-18	7.068E-18	2.072E-17	5.632E-17	1.471E-16	2.264E-16	7.375E-17
U-238+D1	Th-230	2.633E-10	2.663E-23	1.861E-22	9.793E-22	8.627E-21	6.961E-20	6.489E-19	3.819E-18	1.217E-17
U-238+D1	Ra-226+D2	2.633E-10	2.257E-25	3.379E-24	3.924E-23	1.024E-21	2.389E-20	7.253E-19	1.228E-17	1.058E-16
U-238+D1	Pb-210+D1	2.633E-10	1.351E-29	4.157E-28	1.031E-26	7.605E-25	4.598E-23	3.296E-21	8.885E-20	9.339E-19
U-238+D1	ΣDSR(j)		8.449E-12	8.421E-12	8.365E-12	8.173E-12	7.648E-12	6.063E-12	3.122E-12	3.059E-13
U-238+D1	U-238+D1	3.789E-12	1.216E-13	1.212E-13	1.204E-13	1.176E-13	1.101E-13	8.726E-14	4.493E-14	4.401E-15
U-238+D1	U-234	3.789E-12	1.467E-20	4.389E-20	1.017E-19	2.982E-19	8.106E-19	2.117E-18	3.258E-18	1.061E-18
U-238+D1	Th-230	3.789E-12	3.834E-25	2.678E-24	1.410E-23	1.242E-22	1.002E-21	9.340E-21	5.497E-20	1.752E-19
U-238+D1	Ra-226+D2	3.789E-12	3.249E-27	4.863E-26	5.648E-25	1.474E-23	3.438E-22	1.044E-20	1.767E-19	1.522E-18
U-238+D1	Pb-210+D2	3.789E-12	1.539E-30	4.735E-29	1.174E-27	8.663E-26	5.237E-24	3.755E-22	1.012E-20	1.064E-19
U-238+D1	ΣDSR(j)		1.216E-13	1.212E-13	1.204E-13	1.176E-13	1.101E-13	8.727E-14	4.493E-14	4.403E-15
U-238+D1	U-238+D1	4.189E-08	1.344E-09	1.340E-09	1.331E-09	1.301E-09	1.217E-09	9.647E-10	4.967E-10	4.865E-11
U-238+D1	U-234	4.189E-08	1.622E-16	4.852E-16	1.125E-15	3.297E-15	8.962E-15	2.340E-14	3.602E-14	1.173E-14
U-238+D1	Th-230	4.189E-08	4.238E-21	2.961E-20	1.558E-19	1.373E-18	1.108E-17	1.033E-16	6.077E-16	1.937E-15
U-238+D1	Ra-226+D3	4.189E-08	1.013E-22	1.516E-21	1.760E-20	4.592E-19	1.072E-17	3.254E-16	5.507E-15	4.745E-14
U-238+D1	Pb-210+D	4.189E-08	1.840E-27	5.663E-26	1.404E-24	1.036E-22	6.265E-21	4.491E-19	1.211E-17	1.272E-16
U-238+D1	Po-210	4.189E-08	6.567E-28	3.350E-26	1.242E-24	1.260E-22	8.640E-21	6.498E-19	1.775E-17	1.873E-16
U-238+D1	ΣDSR(j)		1.344E-09	1.340E-09	1.331E-09	1.301E-09	1.217E-09	9.647E-10	4.967E-10	4.871E-11
U-238+D1	U-238+D1	5.530E-14	1.775E-15	1.769E-15	1.757E-15	1.717E-15	1.606E-15	1.273E-15	6.557E-16	6.421E-17
U-238+D1	U-234	5.530E-14	2.141E-22	6.405E-22	1.485E-21	4.352E-21	1.183E-20	3.089E-20	4.755E-20	1.549E-20
U-238+D1	Th-230	5.530E-14	5.594E-27	3.908E-26	2.057E-25	1.812E-24	1.462E-23	1.363E-22	8.022E-22	2.557E-21
U-238+D1	Ra-226+D3	5.530E-14	1.337E-28	2.001E-27	2.324E-26	6.062E-25	1.415E-23	4.295E-22	7.270E-21	6.263E-20
U-238+D1	Pb-210+D1	5.530E-14	2.837E-33	8.731E-32	2.165E-30	1.597E-28	9.658E-27	6.924E-25	1.866E-23	1.962E-22
U-238+D1	ΣDSR(j)		1.775E-15	1.769E-15	1.757E-15	1.717E-15	1.606E-15	1.273E-15	6.557E-16	6.430E-17
U-238+D1	U-238+D1	7.959E-16	2.554E-17	2.546E-17	2.529E-17	2.471E-17	2.312E-17	1.833E-17	9.437E-18	9.243E-19
U-238+D1	U-234	7.959E-16	3.082E-24	9.219E-24	2.137E-23	6.264E-23	1.703E-22	4.447E-22	6.844E-22	2.230E-22
U-238+D1	Th-230	7.959E-16	8.052E-29	5.626E-28	2.961E-27	2.608E-26	2.104E-25	1.962E-24	1.155E-23	3.681E-23
U-238+D1	Ra-226+D3	7.959E-16	1.924E-30	2.880E-29	3.345E-28	8.726E-27	2.036E-25	6.182E-24	1.046E-22	9.015E-22
U-238+D1	Pb-210+D2	7.959E-16	3.232E-34	9.945E-33	2.466E-31	1.820E-29	1.100E-27	7.887E-26	2.126E-24	2.234E-23
U-238+D1	ΣDSR(j)		2.554E-17	2.546E-17	2.529E-17	2.471E-17	2.312E-17	1.833E-17	9.438E-18	9.255E-19

Summary : Recreator (Outdoor Worker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.997E-07	6.409E-09	6.387E-09	6.345E-09	6.199E-09	5.801E-09	4.598E-09	2.368E-09	2.319E-10
U-238+D1	U-234	1.997E-07	7.732E-16	2.313E-15	5.361E-15	1.572E-14	4.272E-14	1.116E-13	1.717E-13	5.594E-14
U-238+D1	Th-230	1.997E-07	2.020E-20	1.411E-19	7.428E-19	6.544E-18	5.280E-17	4.922E-16	2.897E-15	9.234E-15
U-238+D1	Ra-226+D4	1.997E-07	1.364E-24	2.043E-23	2.372E-22	6.188E-21	1.444E-19	4.385E-18	7.422E-17	6.394E-16
U-238+D1	Pb-210+D	1.997E-07	8.772E-27	2.700E-25	6.693E-24	4.939E-22	2.986E-20	2.141E-18	5.770E-17	6.065E-16
U-238+D1	Po-210	1.997E-07	3.130E-27	1.597E-25	5.919E-24	6.008E-22	4.118E-20	3.097E-18	8.460E-17	8.928E-16
U-238+D1	ΣDSR(j)		6.409E-09	6.387E-09	6.345E-09	6.199E-09	5.801E-09	4.599E-09	2.368E-09	2.320E-10
U-238+D1	U-238+D1	2.636E-13	8.459E-15	8.431E-15	8.375E-15	8.183E-15	7.658E-15	6.070E-15	3.125E-15	3.061E-16
U-238+D1	U-234	2.636E-13	1.021E-21	3.053E-21	7.077E-21	2.074E-20	5.639E-20	1.473E-19	2.267E-19	7.384E-20
U-238+D1	Th-230	2.636E-13	2.667E-26	1.863E-25	9.805E-25	8.637E-24	6.969E-23	6.497E-22	3.824E-21	1.219E-20
U-238+D1	Ra-226+D4	2.636E-13	1.801E-30	2.696E-29	3.131E-28	8.169E-27	1.906E-25	5.788E-24	9.796E-23	8.440E-22
U-238+D1	Pb-210+D1	2.636E-13	1.352E-32	4.162E-31	1.032E-29	7.615E-28	4.603E-26	3.300E-24	8.896E-23	9.350E-22
U-238+D1	ΣDSR(j)		8.459E-15	8.431E-15	8.375E-15	8.183E-15	7.658E-15	6.070E-15	3.126E-15	3.062E-16
U-238+D1	U-238+D1	3.794E-15	1.218E-16	1.214E-16	1.206E-16	1.178E-16	1.102E-16	8.737E-17	4.499E-17	4.406E-18
U-238+D1	U-234	3.794E-15	1.469E-23	4.394E-23	1.019E-22	2.986E-22	8.116E-22	2.120E-21	3.262E-21	1.063E-21
U-238+D1	Th-230	3.794E-15	3.838E-28	2.682E-27	1.411E-26	1.243E-25	1.003E-24	9.351E-24	5.504E-23	1.755E-22
U-238+D1	Ra-226+D4	3.794E-15	2.592E-32	3.881E-31	4.507E-30	1.176E-28	2.744E-27	8.331E-26	1.410E-24	1.215E-23
U-238+D1	Pb-210+D2	3.794E-15	1.540E-33	4.741E-32	1.175E-30	8.673E-29	5.244E-27	3.759E-25	1.013E-23	1.065E-22
U-238+D1	ΣDSR(j)		1.218E-16	1.214E-16	1.206E-16	1.178E-16	1.102E-16	8.737E-17	4.499E-17	4.407E-18

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Nuclide										
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Pb-210	4.473E+02	3.495E+02	3.567E+02	4.485E+02	8.659E+02	8.654E+03	6.218E+06	*7.632E+13		
Po-210	1.171E+03	7.415E+03	2.975E+05	1.217E+11	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15		
Ra-226	5.759E+00	5.772E+00	5.799E+00	5.895E+00	6.197E+00	7.494E+00	1.313E+01	9.364E+01		
Th-230	5.027E+02	4.844E+02	4.517E+02	3.660E+02	2.400E+02	1.160E+02	5.733E+01	3.656E+01		
U-234	4.372E+03	4.386E+03	4.415E+03	4.516E+03	4.811E+03	5.936E+03	9.487E+03	1.351E+04		
U-238	3.456E+02	3.468E+02	3.491E+02	3.573E+02	3.818E+02	4.817E+02	9.355E+02	9.546E+03		

*At specific activity limit

Summary : Recreator (Outdoor Worker)

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Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Pb-210	1.000E+00	1.517 ± 0.003	3.473E-02	3.455E+02	2.683E-02	4.473E+02
Po-210	1.000E+00	0.000E+00	1.025E-02	1.171E+03	1.025E-02	1.171E+03
Ra-226	1.000E+00	0.000E+00	2.084E+00	5.759E+00	2.084E+00	5.759E+00
Th-230	1.000E+00	1.000E+03	3.282E-01	3.656E+01	2.387E-02	5.027E+02
U-234	1.000E+00	0.000E+00	2.745E-03	4.372E+03	2.745E-03	4.372E+03
U-238	1.000E+00	0.000E+00	3.472E-02	3.456E+02	3.472E-02	3.456E+02

Summary : Recreator (Outdoor Worker)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	1.487E-02	1.439E-02	1.347E-02	1.070E-02	5.544E-03	5.548E-04	7.721E-07	7.765E-17
Pb-210	Pb-210	1.320E-06	2.292E-08	2.218E-08	2.077E-08	1.650E-08	8.547E-09	8.552E-10	1.190E-12	1.197E-22
Pb-210	Ra-226	9.996E-01	2.331E-04	6.884E-04	1.551E-03	4.124E-03	8.645E-03	1.125E-02	6.747E-03	9.459E-04
Pb-210	Ra-226	2.100E-04	4.896E-08	1.446E-07	3.258E-07	8.662E-07	1.816E-06	2.364E-06	1.417E-06	1.987E-07
Pb-210	Ra-226	1.998E-04	4.658E-08	1.376E-07	3.100E-07	8.241E-07	1.728E-06	2.249E-06	1.348E-06	1.890E-07
Pb-210	Ra-226	4.196E-08	9.785E-12	2.889E-11	6.512E-11	1.731E-10	3.629E-10	4.724E-10	2.832E-10	3.970E-11
Pb-210	Ra-226	2.000E-07	4.664E-11	1.377E-10	3.104E-10	8.251E-10	1.730E-09	2.252E-09	1.350E-09	1.893E-10
Pb-210	Th-230	9.996E-01	3.376E-08	2.339E-07	1.209E-06	9.979E-06	6.778E-05	3.958E-04	1.171E-03	2.051E-03
Pb-210	Th-230	2.100E-04	7.091E-12	4.914E-11	2.539E-10	2.096E-09	1.424E-08	8.313E-08	2.459E-07	4.309E-07
Pb-210	Th-230	1.998E-04	6.747E-12	4.675E-11	2.415E-10	1.994E-09	1.354E-08	7.909E-08	2.339E-07	4.099E-07
Pb-210	Th-230	4.196E-08	1.417E-15	9.820E-15	5.073E-14	4.189E-13	2.845E-12	1.661E-11	4.913E-11	8.610E-11
Pb-210	Th-230	2.000E-07	6.755E-15	4.681E-14	2.418E-13	1.997E-12	1.356E-11	7.919E-11	2.342E-10	4.104E-10
Pb-210	U-234	9.996E-01	7.770E-14	1.156E-12	1.324E-11	3.286E-10	6.707E-09	1.389E-07	1.226E-06	4.832E-06
Pb-210	U-234	2.100E-04	1.632E-17	2.428E-16	2.780E-15	6.902E-14	1.409E-12	2.919E-11	2.576E-10	1.015E-09
Pb-210	U-234	1.998E-04	1.553E-17	2.310E-16	2.645E-15	6.567E-14	1.340E-12	2.777E-11	2.451E-10	9.656E-10
Pb-210	U-234	4.196E-08	3.261E-21	4.852E-20	5.556E-19	1.379E-17	2.815E-16	5.832E-15	5.147E-14	2.028E-13
Pb-210	U-234	2.000E-07	1.555E-20	2.313E-19	2.649E-18	6.575E-17	1.342E-15	2.780E-14	2.454E-13	9.667E-13
Pb-210	U-238	1.599E-03	7.026E-23	2.162E-21	5.361E-20	3.956E-18	2.392E-16	1.715E-14	4.622E-13	4.858E-12
Pb-210	U-238	3.359E-07	1.476E-26	4.542E-25	1.126E-23	8.310E-22	5.024E-20	3.602E-18	9.708E-17	1.020E-15
Pb-210	U-238	3.196E-07	1.404E-26	4.321E-25	1.071E-23	7.906E-22	4.780E-20	3.427E-18	9.236E-17	9.708E-16
Pb-210	U-238	6.713E-11	2.436E-30	9.076E-29	2.250E-27	1.661E-25	1.004E-23	7.198E-22	1.940E-20	2.039E-19
Pb-210	U-238	3.200E-10	1.406E-29	4.326E-28	1.073E-26	7.916E-25	4.785E-23	3.431E-21	9.248E-20	9.720E-19
Pb-210	U-238	9.980E-01	4.384E-20	1.349E-18	3.345E-17	2.469E-15	1.492E-13	1.070E-11	2.884E-10	3.031E-09
Pb-210	U-238	2.096E-04	9.209E-24	2.834E-22	7.026E-21	5.185E-19	3.135E-17	2.247E-15	6.058E-14	6.367E-13
Pb-210	U-238	1.994E-04	8.762E-24	2.696E-22	6.685E-21	4.933E-19	2.983E-17	2.138E-15	5.764E-14	6.058E-13
Pb-210	U-238	4.189E-08	1.840E-27	5.663E-26	1.404E-24	1.036E-22	6.265E-21	4.491E-19	1.211E-17	1.272E-16
Pb-210	U-238	1.997E-07	8.772E-27	2.700E-25	6.693E-24	4.939E-22	2.986E-20	2.141E-18	5.770E-17	6.065E-16
Pb-210	ΣDOSE(j)		1.510E-02	1.508E-02	1.503E-02	1.484E-02	1.426E-02	1.221E-02	7.923E-03	3.003E-03
Po-210	Pb-210	1.000E+00	1.196E-02	1.995E-02	2.016E-02	1.605E-02	8.315E-03	8.319E-04	1.158E-06	1.164E-16
Po-210	Po-210	1.000E+00	1.025E-02	1.618E-03	4.034E-05	9.864E-11	9.134E-27	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	1.414E-04	6.777E-04	1.947E-03	5.811E-03	1.261E-02	1.659E-02	9.953E-03	1.395E-03
Po-210	Ra-226	2.100E-04	2.969E-08	1.423E-07	4.090E-07	1.221E-06	2.649E-06	3.484E-06	2.091E-06	2.931E-07
Po-210	Ra-226	1.998E-04	2.825E-08	1.354E-07	3.891E-07	1.161E-06	2.520E-06	3.315E-06	1.989E-06	2.788E-07
Po-210	Ra-226	4.196E-08	5.934E-12	2.845E-11	8.173E-11	2.439E-10	5.294E-10	6.962E-10	4.178E-10	5.857E-11
Po-210	Ra-226	2.000E-07	2.829E-11	1.356E-10	3.896E-10	1.163E-09	2.523E-09	3.319E-09	1.991E-09	2.792E-10
Po-210	Th-230	9.996E-01	1.655E-08	1.855E-07	1.323E-06	1.333E-05	9.687E-05	5.791E-04	1.722E-03	3.021E-03
Po-210	Th-230	2.100E-04	3.476E-12	3.897E-11	2.780E-10	2.801E-09	2.035E-08	1.216E-07	3.617E-07	6.346E-07
Po-210	Th-230	1.998E-04	3.307E-12	3.708E-11	2.645E-10	2.665E-09	1.936E-08	1.157E-07	3.441E-07	6.037E-07
Po-210	Th-230	4.196E-08	6.947E-16	7.788E-15	5.555E-14	5.597E-13	4.066E-12	2.431E-11	7.227E-11	1.268E-10
Po-210	Th-230	2.000E-07	3.311E-15	3.712E-14	2.648E-13	2.668E-12	1.938E-11	1.159E-10	3.445E-10	6.045E-10
Po-210	U-234	9.996E-01	3.206E-14	7.797E-13	1.293E-11	4.183E-10	9.413E-09	2.021E-07	1.801E-06	7.114E-06
Po-210	U-234	2.100E-04	6.735E-18	1.638E-16	2.716E-15	8.787E-14	1.977E-12	4.246E-11	3.783E-10	1.494E-09
Po-210	U-234	1.998E-04	6.407E-18	1.558E-16	2.584E-15	8.360E-14	1.881E-12	4.040E-11	3.599E-10	1.422E-09
Po-210	U-234	4.196E-08	1.346E-21	3.273E-20	5.427E-19	1.756E-17	3.951E-16	8.485E-15	7.559E-14	2.986E-13
Po-210	U-234	2.000E-07	6.415E-21	1.560E-19	2.587E-18	8.370E-17	1.883E-15	4.044E-14	3.603E-13	1.423E-12
Po-210	U-238	1.599E-03	2.507E-23	1.279E-21	4.741E-20	4.812E-18	3.298E-16	2.481E-14	6.776E-13	7.151E-12
Po-210	U-238	3.359E-07	5.266E-27	2.687E-25	9.957E-24	1.011E-21	6.928E-20	5.211E-18	1.423E-16	1.502E-15
Po-210	U-238	3.196E-07	5.010E-27	2.556E-25	9.473E-24	9.616E-22	6.592E-20	4.957E-18	1.354E-16	1.429E-15

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	1.014E-30	5.366E-29	1.989E-27	2.020E-25	1.385E-23	1.041E-21	2.844E-20	3.002E-19
Po-210	U-238	3.200E-10	4.832E-30	2.558E-28	9.485E-27	9.628E-25	6.600E-23	4.963E-21	1.356E-19	1.431E-18
Po-210	U-238	9.980E-01	1.565E-20	7.981E-19	2.958E-17	3.003E-15	2.058E-13	1.548E-11	4.228E-10	4.462E-09
Po-210	U-238	2.096E-04	3.286E-24	1.676E-22	6.213E-21	6.307E-19	4.323E-17	3.251E-15	8.881E-14	9.373E-13
Po-210	U-238	1.994E-04	3.127E-24	1.595E-22	5.911E-21	6.001E-19	4.113E-17	3.093E-15	8.449E-14	8.917E-13
Po-210	U-238	4.189E-08	6.564E-28	3.350E-26	1.242E-24	1.260E-22	8.640E-21	6.498E-19	1.775E-17	1.873E-16
Po-210	U-238	1.997E-07	3.130E-27	1.597E-25	5.919E-24	6.008E-22	4.118E-20	3.097E-18	8.460E-17	8.928E-16
Po-210	ΣDOSE(j)		2.235E-02	2.224E-02	2.215E-02	2.188E-02	2.103E-02	1.801E-02	1.168E-02	4.425E-03
Pb-210	Pb-210	1.900E-08	2.611E-09	2.527E-09	2.366E-09	1.879E-09	9.736E-10	9.742E-11	1.356E-13	1.364E-23
Pb-210	Ra-226	1.899E-08	4.093E-11	1.209E-10	2.724E-10	7.241E-10	1.518E-09	1.976E-09	1.185E-09	1.661E-10
Pb-210	Ra-226	3.989E-12	8.598E-15	2.539E-14	5.722E-14	1.521E-13	3.189E-13	4.151E-13	2.489E-13	3.489E-14
Pb-210	Ra-226	3.795E-12	8.180E-15	2.416E-14	5.444E-14	1.447E-13	3.034E-13	3.949E-13	2.368E-13	3.319E-14
Pb-210	Ra-226	7.972E-16	1.718E-18	5.074E-18	1.143E-17	3.040E-17	6.372E-17	8.295E-17	4.973E-17	6.972E-18
Pb-210	Ra-226	3.800E-15	8.190E-18	2.419E-17	5.450E-17	1.449E-16	3.037E-16	3.954E-16	2.370E-16	3.323E-17
Pb-210	Th-230	1.899E-08	5.929E-15	4.108E-14	2.122E-13	1.752E-12	1.190E-11	6.950E-11	2.055E-10	3.602E-10
Pb-210	Th-230	3.989E-12	1.245E-18	8.629E-18	4.458E-17	3.681E-16	2.500E-15	1.460E-14	4.317E-14	7.566E-14
Pb-210	Th-230	3.795E-12	1.185E-18	8.210E-18	4.241E-17	3.502E-16	2.378E-15	1.389E-14	4.108E-14	7.198E-14
Pb-210	Th-230	7.972E-16	2.489E-22	1.724E-21	8.909E-21	7.355E-20	4.996E-19	2.917E-18	8.628E-18	1.512E-17
Pb-210	Th-230	3.800E-15	1.186E-21	8.220E-21	4.247E-20	3.506E-19	2.381E-18	1.391E-17	4.113E-17	7.207E-17
Pb-210	U-234	1.899E-08	1.364E-20	2.030E-19	2.325E-18	5.770E-17	1.178E-15	2.440E-14	2.153E-13	8.484E-13
Pb-210	U-234	3.989E-12	2.866E-24	4.263E-23	4.883E-22	1.212E-20	2.474E-19	5.125E-18	4.523E-17	1.782E-16
Pb-210	U-234	3.795E-12	2.727E-24	4.056E-23	4.645E-22	1.153E-20	2.354E-19	4.876E-18	4.303E-17	1.696E-16
Pb-210	U-234	7.972E-16	5.727E-28	8.520E-27	9.757E-26	2.422E-24	4.943E-23	1.024E-21	9.039E-21	3.561E-20
Pb-210	U-234	3.800E-15	2.730E-27	4.061E-26	4.651E-25	1.155E-23	2.356E-22	4.882E-21	4.308E-20	1.698E-19
Pb-210	U-238	3.039E-11	1.224E-29	3.797E-28	9.414E-27	6.947E-25	4.200E-23	3.011E-21	8.116E-20	8.531E-19
Pb-210	U-238	6.383E-15	0.000E+00	0.000E+00	1.786E-30	1.459E-28	8.822E-27	6.325E-25	1.705E-23	1.792E-22
Pb-210	U-238	6.073E-15	0.000E+00	0.000E+00	1.699E-30	1.388E-28	8.393E-27	6.017E-25	1.622E-23	1.705E-22
Pb-210	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.592E-30	1.254E-28	3.407E-27	3.581E-26
Pb-210	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.589E-30	6.025E-28	1.624E-26	1.707E-25
Pb-210	U-238	1.896E-08	7.699E-27	2.369E-25	5.874E-24	4.335E-22	2.621E-20	1.879E-18	5.064E-17	5.323E-16
Pb-210	U-238	3.983E-12	1.461E-30	4.938E-29	1.234E-27	9.105E-26	5.505E-24	3.947E-22	1.064E-20	1.118E-19
Pb-210	U-238	3.789E-12	1.390E-30	4.698E-29	1.174E-27	8.663E-26	5.237E-24	3.755E-22	1.012E-20	1.064E-19
Pb-210	U-238	7.959E-16	0.000E+00	0.000E+00	0.000E+00	1.806E-29	1.100E-27	7.887E-26	2.126E-24	2.234E-23
Pb-210	U-238	3.794E-15	0.000E+00	0.000E+00	1.061E-30	8.607E-29	5.244E-27	3.759E-25	1.013E-23	1.065E-22
Pb-210	ΣDOSE(j)		2.652E-09	2.648E-09	2.639E-09	2.606E-09	2.504E-09	2.144E-09	1.391E-09	5.274E-10
Ra-226	Ra-226	9.996E-01	2.082E+00	2.076E+00	2.064E+00	2.024E+00	1.914E+00	1.572E+00	8.969E-01	1.257E-01
Ra-226	Ra-226	1.319E-06	2.748E-06	2.740E-06	2.725E-06	2.672E-06	2.526E-06	2.076E-06	1.184E-06	1.660E-07
Ra-226	Th-230	9.996E-01	4.512E-04	1.352E-03	3.145E-03	9.344E-03	2.640E-02	7.904E-02	1.830E-01	2.998E-01
Ra-226	Th-230	1.319E-06	5.955E-10	1.784E-09	4.152E-09	1.233E-08	3.484E-08	1.043E-07	2.415E-07	3.957E-07
Ra-226	Th-230	1.899E-08	8.572E-12	2.568E-11	5.976E-11	1.775E-10	5.015E-10	1.502E-09	3.476E-09	5.696E-09
Ra-226	U-234	9.996E-01	1.382E-09	9.657E-09	5.084E-08	4.484E-07	3.630E-06	3.424E-05	2.078E-04	7.146E-04
Ra-226	U-234	1.319E-06	1.824E-15	1.275E-14	6.711E-14	5.919E-13	4.792E-12	4.519E-11	2.743E-10	9.432E-10
Ra-226	U-234	1.899E-08	2.626E-17	1.835E-16	9.660E-16	8.520E-15	6.897E-14	6.505E-13	3.948E-12	1.358E-11
Ra-226	U-238	1.599E-03	1.560E-18	2.336E-17	2.713E-16	7.077E-15	1.651E-13	5.014E-12	8.487E-11	7.312E-10
Ra-226	U-238	2.111E-09	2.060E-24	3.083E-23	3.581E-22	9.341E-21	2.180E-19	6.619E-18	1.120E-16	9.651E-16
Ra-226	U-238	3.039E-11	2.965E-26	4.438E-25	5.154E-24	1.345E-22	3.138E-21	9.527E-20	1.613E-18	1.389E-17
Ra-226	U-238	9.980E-01	9.736E-16	1.457E-14	1.693E-13	4.416E-12	1.030E-10	3.129E-09	5.296E-08	4.562E-07

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	1.285E-21	1.924E-20	2.234E-19	5.829E-18	1.360E-16	4.130E-15	6.990E-14	6.022E-13
Ra-226	U-238	1.896E-08	1.850E-23	2.769E-22	3.216E-21	8.390E-20	1.958E-18	5.945E-17	1.006E-15	8.669E-15
Ra-226	ΣDOSE(j)		2.082E+00	2.077E+00	2.068E+00	2.034E+00	1.940E+00	1.651E+00	1.080E+00	4.262E-01
Pb-210	Ra-226	1.319E-06	3.594E-10	1.061E-09	2.392E-09	6.357E-09	1.333E-08	1.735E-08	1.040E-08	1.458E-09
Pb-210	Ra-226	2.771E-10	7.548E-14	2.229E-13	5.023E-13	1.335E-12	2.799E-12	3.644E-12	2.185E-12	3.063E-13
Pb-210	Ra-226	2.637E-10	7.181E-14	2.121E-13	4.779E-13	1.270E-12	2.663E-12	3.467E-12	2.079E-12	2.914E-13
Pb-210	Ra-226	5.538E-14	1.508E-17	4.454E-17	1.004E-16	2.668E-16	5.594E-16	7.282E-16	4.366E-16	6.121E-17
Pb-210	Ra-226	2.640E-13	7.190E-17	2.123E-16	4.785E-16	1.272E-15	2.666E-15	3.471E-15	2.081E-15	2.918E-16
Pb-210	Th-230	1.319E-06	5.205E-14	3.607E-13	1.863E-12	1.538E-11	1.045E-10	6.101E-10	1.805E-09	3.162E-09
Pb-210	Th-230	2.771E-10	1.093E-17	7.575E-17	3.914E-16	3.231E-15	2.195E-14	1.282E-13	3.790E-13	6.642E-13
Pb-210	Th-230	2.637E-10	1.040E-17	7.207E-17	3.724E-16	3.074E-15	2.088E-14	1.219E-13	3.606E-13	6.320E-13
Pb-210	Th-230	5.538E-14	2.185E-21	1.514E-20	7.821E-20	6.457E-19	4.386E-18	2.561E-17	7.575E-17	1.327E-16
Pb-210	Th-230	2.640E-13	1.041E-20	7.216E-20	3.728E-19	3.078E-18	2.091E-17	1.221E-16	3.611E-16	6.327E-16
Pb-210	U-234	1.319E-06	1.198E-19	1.782E-18	2.041E-17	5.066E-16	1.034E-14	2.142E-13	1.890E-12	7.449E-12
Pb-210	U-234	2.771E-10	2.516E-23	3.743E-22	4.286E-21	1.064E-19	2.172E-18	4.499E-17	3.971E-16	1.565E-15
Pb-210	U-234	2.637E-10	2.394E-23	3.561E-22	4.078E-21	1.012E-19	2.066E-18	4.281E-17	3.778E-16	1.489E-15
Pb-210	U-234	5.538E-14	5.028E-27	7.480E-26	8.566E-25	2.126E-23	4.340E-22	8.991E-21	7.935E-20	3.127E-19
Pb-210	U-234	2.640E-13	2.397E-26	3.565E-25	4.083E-24	1.014E-22	2.069E-21	4.286E-20	3.782E-19	1.490E-18
Pb-210	U-238	2.111E-09	1.083E-28	3.333E-27	8.264E-26	6.099E-24	3.687E-22	2.643E-20	7.125E-19	7.489E-18
Pb-210	U-238	4.434E-13	0.000E+00	0.000E+00	1.736E-29	1.281E-27	7.745E-26	5.552E-24	1.497E-22	1.573E-21
Pb-210	U-238	4.219E-13	0.000E+00	0.000E+00	1.652E-29	1.219E-27	7.368E-26	5.283E-24	1.424E-22	1.497E-21
Pb-210	U-238	8.862E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.452E-29	1.110E-27	2.991E-26	3.144E-25
Pb-210	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.377E-29	5.289E-27	1.426E-25	1.498E-24
Pb-210	U-238	1.317E-06	6.759E-26	2.080E-24	5.157E-23	3.806E-21	2.301E-19	1.650E-17	4.446E-16	4.673E-15
Pb-210	U-238	2.767E-10	1.332E-29	4.369E-28	1.083E-26	7.994E-25	4.833E-23	3.465E-21	9.339E-20	9.816E-19
Pb-210	U-238	2.633E-10	1.267E-29	4.157E-28	1.031E-26	7.605E-25	4.598E-23	3.296E-21	8.885E-20	9.339E-19
Pb-210	U-238	5.530E-14	0.000E+00	0.000E+00	1.531E-30	1.597E-28	9.658E-27	6.924E-25	1.866E-23	1.962E-22
Pb-210	U-238	2.636E-13	0.000E+00	0.000E+00	9.677E-30	7.615E-28	4.603E-26	3.300E-24	8.896E-23	9.350E-22
Pb-210	ΣDOSE(j)		3.596E-10	1.062E-09	2.394E-09	6.375E-09	1.344E-08	1.797E-08	1.221E-08	4.630E-09
Ra-226	Ra-226	1.899E-08	3.956E-08	3.944E-08	3.922E-08	3.846E-08	3.636E-08	2.987E-08	1.704E-08	2.389E-09
Ra-226	Ra-226	2.100E-04	1.136E-03	1.133E-03	1.127E-03	1.105E-03	1.045E-03	8.583E-04	4.896E-04	6.863E-05
Ra-226	ΣDOSE(j)		1.136E-03	1.133E-03	1.127E-03	1.105E-03	1.045E-03	8.583E-04	4.896E-04	6.863E-05
Ra-226	Ra-226	2.771E-10	1.500E-09	1.496E-09	1.487E-09	1.459E-09	1.379E-09	1.133E-09	6.462E-10	9.059E-11
Ra-226	Ra-226	3.989E-12	2.159E-11	2.153E-11	2.141E-11	2.099E-11	1.985E-11	1.631E-11	9.302E-12	1.304E-12
Ra-226	ΣDOSE(j)		1.522E-09	1.517E-09	1.509E-09	1.480E-09	1.399E-09	1.149E-09	6.555E-10	9.189E-11
Ra-226	Ra-226	1.998E-04	3.656E-04	3.646E-04	3.626E-04	3.555E-04	3.361E-04	2.761E-04	1.575E-04	2.208E-05
Ra-226	Ra-226	2.637E-10	4.826E-10	4.813E-10	4.786E-10	4.693E-10	4.436E-10	3.645E-10	2.079E-10	2.915E-11
Ra-226	Th-230	1.998E-04	7.923E-08	2.374E-07	5.524E-07	1.641E-06	4.636E-06	1.388E-05	3.213E-05	5.265E-05
Ra-226	Th-230	2.637E-10	1.046E-13	3.134E-13	7.292E-13	2.166E-12	6.119E-12	1.832E-11	4.242E-11	6.950E-11
Ra-226	Th-230	3.795E-12	1.505E-15	4.511E-15	1.050E-14	3.118E-14	8.808E-14	2.637E-13	6.105E-13	1.000E-12
Ra-226	U-234	1.998E-04	2.427E-13	1.696E-12	8.929E-12	7.875E-11	6.376E-10	6.013E-09	3.649E-08	1.255E-07
Ra-226	U-234	2.637E-10	3.204E-19	2.239E-18	1.179E-17	1.040E-16	8.416E-16	7.937E-15	4.817E-14	1.657E-13
Ra-226	U-234	3.795E-12	4.612E-21	3.223E-20	1.697E-19	1.496E-18	1.211E-17	1.142E-16	6.933E-16	2.384E-15
Ra-226	U-238	3.196E-07	2.740E-22	4.102E-21	4.764E-20	1.243E-18	2.900E-17	8.806E-16	1.490E-14	1.284E-13
Ra-226	U-238	4.219E-13	3.604E-28	5.415E-27	6.289E-26	1.641E-24	3.828E-23	1.162E-21	1.967E-20	1.695E-19

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	5.187E-30	7.765E-29	9.043E-28	2.361E-26	5.510E-25	1.673E-23	2.832E-22	2.440E-21
Ra-226	U-238	1.994E-04	1.710E-19	2.560E-18	2.973E-17	7.755E-16	1.810E-14	5.495E-13	9.301E-12	8.013E-11
Ra-226	U-238	2.633E-10	2.257E-25	3.379E-24	3.924E-23	1.024E-21	2.389E-20	7.253E-19	1.228E-17	1.058E-16
Ra-226	U-238	3.789E-12	3.249E-27	4.863E-26	5.648E-25	1.474E-23	3.438E-22	1.044E-20	1.767E-19	1.522E-18
Ra-226	ΣDOSE(j)		3.657E-04	3.648E-04	3.631E-04	3.571E-04	3.407E-04	2.900E-04	1.897E-04	7.486E-05
Ra-226	Ra-226	3.795E-12	6.947E-12	6.927E-12	6.889E-12	6.755E-12	6.386E-12	5.247E-12	2.993E-12	4.195E-13
Ra-226	Ra-226	4.196E-08	2.165E-07	2.159E-07	2.147E-07	2.105E-07	1.990E-07	1.635E-07	9.327E-08	1.307E-08
Ra-226	ΣDOSE(j)		2.165E-07	2.159E-07	2.147E-07	2.105E-07	1.990E-07	1.635E-07	9.328E-08	1.308E-08
Ra-226	Ra-226	5.538E-14	2.858E-13	2.850E-13	2.834E-13	2.779E-13	2.627E-13	2.158E-13	1.231E-13	1.726E-14
Ra-226	Ra-226	7.972E-16	4.114E-15	4.102E-15	4.079E-15	4.000E-15	3.781E-15	3.107E-15	1.772E-15	2.484E-16
Ra-226	ΣDOSE(j)		2.899E-13	2.891E-13	2.875E-13	2.819E-13	2.665E-13	2.190E-13	1.249E-13	1.751E-14
Ra-226	Ra-226	2.000E-07	2.918E-09	2.909E-09	2.893E-09	2.837E-09	2.682E-09	2.204E-09	1.257E-09	1.762E-10
Ra-226	Ra-226	2.640E-13	3.851E-15	3.840E-15	3.819E-15	3.745E-15	3.540E-15	2.909E-15	1.659E-15	2.326E-16
Ra-226	Th-230	2.000E-07	6.323E-13	1.894E-12	4.408E-12	1.310E-11	3.699E-11	1.108E-10	2.564E-10	4.202E-10
Ra-226	Th-230	2.640E-13	8.346E-19	2.501E-18	5.819E-18	1.729E-17	4.883E-17	1.462E-16	3.385E-16	5.546E-16
Ra-226	Th-230	3.800E-15	1.201E-20	3.599E-20	8.375E-20	2.488E-19	7.028E-19	2.105E-18	4.872E-18	7.983E-18
Ra-226	U-234	2.000E-07	1.937E-18	1.353E-17	7.125E-17	6.284E-16	5.087E-15	4.798E-14	2.912E-13	1.001E-12
Ra-226	U-234	2.640E-13	2.557E-24	1.786E-23	9.405E-23	8.295E-22	6.715E-21	6.333E-20	3.843E-19	1.322E-18
Ra-226	U-234	3.800E-15	3.680E-26	2.571E-25	1.354E-24	1.194E-23	9.666E-23	9.116E-22	5.532E-21	1.903E-20
Ra-226	U-238	3.200E-10	2.187E-27	3.273E-26	3.802E-25	9.917E-24	2.314E-22	7.027E-21	1.189E-19	1.025E-18
Ra-226	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	1.309E-29	3.055E-28	9.276E-27	1.570E-25	1.353E-24
Ra-226	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.851E-30	1.335E-28	2.260E-27	1.947E-26
Ra-226	U-238	1.997E-07	1.364E-24	2.043E-23	2.372E-22	6.188E-21	1.444E-19	4.385E-18	7.422E-17	6.394E-16
Ra-226	U-238	2.636E-13	0.000E+00	2.696E-29	3.131E-28	8.169E-27	1.906E-25	5.788E-24	9.796E-23	8.440E-22
Ra-226	U-238	3.794E-15	0.000E+00	0.000E+00	3.948E-30	1.176E-28	2.744E-27	8.331E-26	1.410E-24	1.215E-23
Ra-226	ΣDOSE(j)		2.918E-09	2.911E-09	2.898E-09	2.850E-09	2.719E-09	2.314E-09	1.514E-09	5.974E-10
Ra-226	Ra-226	3.800E-15	5.543E-17	5.528E-17	5.497E-17	5.390E-17	5.096E-17	4.187E-17	2.388E-17	3.348E-18
Th-230	Th-230	9.996E-01	2.341E-02	2.341E-02	2.341E-02	2.341E-02	2.340E-02	2.338E-02	2.333E-02	2.313E-02
Th-230	Th-230	1.319E-06	3.090E-08	3.090E-08	3.090E-08	3.090E-08	3.089E-08	3.086E-08	3.079E-08	3.053E-08
Th-230	U-234	9.996E-01	1.075E-07	3.221E-07	7.490E-07	2.221E-06	6.243E-06	1.838E-05	4.083E-05	6.192E-05
Th-230	U-234	1.319E-06	1.419E-13	4.251E-13	9.887E-13	2.932E-12	8.240E-12	2.426E-11	5.390E-11	8.173E-11
Th-230	U-234	1.899E-08	2.043E-15	6.119E-15	1.423E-14	4.220E-14	1.186E-13	3.492E-13	7.758E-13	1.176E-12
Th-230	U-234	2.100E-04	2.258E-11	6.765E-11	1.573E-10	4.665E-10	1.311E-09	3.861E-09	8.577E-09	1.301E-08
Th-230	U-234	2.771E-10	2.981E-17	8.929E-17	2.077E-16	6.158E-16	1.731E-15	5.096E-15	1.132E-14	1.717E-14
Th-230	U-234	3.989E-12	4.291E-19	1.285E-18	2.989E-18	8.864E-18	2.491E-17	7.336E-17	1.630E-16	2.471E-16
Th-230	U-234	1.998E-04	2.148E-11	6.436E-11	1.497E-10	4.439E-10	1.248E-09	3.673E-09	8.160E-09	1.237E-08
Th-230	U-234	2.637E-10	2.836E-17	8.495E-17	1.976E-16	5.859E-16	1.647E-15	4.849E-15	1.077E-14	1.633E-14
Th-230	U-234	3.795E-12	4.082E-19	1.223E-18	2.844E-18	8.433E-18	2.370E-17	6.979E-17	1.550E-16	2.351E-16
Th-230	U-234	4.196E-08	4.513E-15	1.352E-14	3.144E-14	9.323E-14	2.620E-13	7.716E-13	1.714E-12	2.599E-12
Th-230	U-234	5.538E-14	5.957E-21	1.784E-20	4.150E-20	1.231E-19	3.459E-19	1.018E-18	2.262E-18	3.431E-18
Th-230	U-234	7.972E-16	8.574E-23	2.568E-22	5.974E-22	1.771E-21	4.979E-21	1.466E-20	3.257E-20	4.938E-20
Th-230	U-234	2.000E-07	2.151E-14	6.444E-14	1.499E-13	4.444E-13	1.249E-12	3.678E-12	8.170E-12	1.239E-11
Th-230	U-234	2.640E-13	2.839E-20	8.506E-20	1.978E-19	5.866E-19	1.649E-18	4.855E-18	1.078E-17	1.635E-17
Th-230	U-234	3.800E-15	4.087E-22	1.224E-21	2.847E-21	8.444E-21	2.373E-20	6.988E-20	1.552E-19	2.354E-19

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	1.618E-16	1.130E-15	5.950E-15	5.241E-14	4.229E-13	3.942E-12	2.320E-11	7.396E-11
Th-230	U-238	2.111E-09	2.136E-22	1.492E-21	7.854E-21	6.918E-20	5.582E-19	5.203E-18	3.063E-17	9.763E-17
Th-230	U-238	3.039E-11	3.074E-24	2.148E-23	1.130E-22	9.958E-22	8.035E-21	7.490E-20	4.408E-19	1.405E-18
Th-230	U-238	3.359E-07	3.399E-20	2.374E-19	1.250E-18	1.101E-17	8.882E-17	8.280E-16	4.873E-15	1.554E-14
Th-230	U-238	4.434E-13	4.486E-26	3.134E-25	1.650E-24	1.453E-23	1.172E-22	1.093E-21	6.433E-21	2.051E-20
Th-230	U-238	6.383E-15	6.457E-28	4.512E-27	2.374E-26	2.092E-25	1.688E-24	1.573E-23	9.259E-23	2.952E-22
Th-230	U-238	3.196E-07	3.233E-20	2.259E-19	1.189E-18	1.047E-17	8.451E-17	7.878E-16	4.637E-15	1.478E-14
Th-230	U-238	4.219E-13	4.268E-26	2.982E-25	1.569E-24	1.383E-23	1.115E-22	1.040E-21	6.120E-21	1.951E-20
Th-230	U-238	6.073E-15	6.144E-28	4.292E-27	2.259E-26	1.990E-25	1.606E-24	1.497E-23	8.809E-23	2.808E-22
Th-230	U-238	6.713E-11	6.792E-24	4.745E-23	2.497E-22	2.200E-21	1.775E-20	1.655E-19	9.739E-19	3.105E-18
Th-230	U-238	8.862E-17	8.879E-30	6.203E-29	3.297E-28	2.904E-27	2.343E-26	2.184E-25	1.286E-24	4.098E-24
Th-230	U-238	1.276E-18	0.000E+00	0.000E+00	3.924E-30	4.140E-29	3.373E-28	3.144E-27	1.850E-26	5.899E-26
Th-230	U-238	3.200E-10	3.237E-23	2.262E-22	1.190E-21	1.049E-20	8.461E-20	7.887E-19	4.642E-18	1.480E-17
Th-230	U-238	4.224E-16	4.232E-29	2.986E-28	1.571E-27	1.384E-26	1.117E-25	1.041E-24	6.128E-24	1.953E-23
Th-230	U-238	6.080E-18	0.000E+00	3.554E-30	2.240E-29	1.992E-28	1.608E-27	1.499E-26	8.820E-26	2.812E-25
Th-230	U-238	9.980E-01	1.010E-13	7.054E-13	3.713E-12	3.270E-11	2.639E-10	2.460E-09	1.448E-08	4.615E-08
Th-230	U-238	1.317E-06	1.333E-19	9.311E-19	4.901E-18	4.317E-17	3.483E-16	3.247E-15	1.911E-14	6.092E-14
Th-230	U-238	1.896E-08	1.918E-21	1.340E-20	7.054E-20	6.214E-19	5.014E-18	4.674E-17	2.751E-16	8.769E-16
Th-230	U-238	2.096E-04	2.121E-17	1.482E-16	7.798E-16	6.869E-15	5.542E-14	5.167E-13	3.041E-12	9.694E-12
Th-230	U-238	2.767E-10	2.799E-23	1.956E-22	1.029E-21	9.068E-21	7.316E-20	6.820E-19	4.014E-18	1.280E-17
Th-230	U-238	3.983E-12	4.029E-25	2.815E-24	1.482E-23	1.305E-22	1.053E-21	9.817E-21	5.778E-20	1.842E-19
Th-230	U-238	1.994E-04	2.018E-17	1.410E-16	7.419E-16	6.536E-15	5.273E-14	4.916E-13	2.893E-12	9.223E-12
Th-230	U-238	2.633E-10	2.663E-23	1.861E-22	9.793E-22	8.627E-21	6.961E-20	6.489E-19	3.819E-18	1.217E-17
Th-230	U-238	3.789E-12	3.834E-25	2.678E-24	1.410E-23	1.242E-22	1.002E-21	9.340E-21	5.497E-20	1.752E-19
Th-230	U-238	4.189E-08	4.238E-21	2.961E-20	1.558E-19	1.373E-18	1.108E-17	1.033E-16	6.077E-16	1.937E-15
Th-230	U-238	5.530E-14	5.594E-27	3.908E-26	2.057E-25	1.812E-24	1.462E-23	1.363E-22	8.022E-22	2.557E-21
Th-230	U-238	7.959E-16	7.975E-29	5.626E-28	2.961E-27	2.608E-26	2.104E-25	1.962E-24	1.155E-23	3.681E-23
Th-230	U-238	1.997E-07	2.020E-20	1.411E-19	7.428E-19	6.544E-18	5.280E-17	4.922E-16	2.897E-15	9.234E-15
Th-230	U-238	2.636E-13	2.667E-26	1.863E-25	9.805E-25	8.637E-24	6.969E-23	6.497E-22	3.824E-21	1.219E-20
Th-230	U-238	3.794E-15	3.838E-28	2.682E-27	1.411E-26	1.243E-25	1.003E-24	9.351E-24	5.504E-23	1.755E-22
Th-230	ΣDOSE (j)		2.341E-02	2.341E-02	2.341E-02	2.341E-02	2.341E-02	2.340E-02	2.337E-02	2.319E-02
Th-230	Th-230	1.899E-08	4.448E-10	4.448E-10	4.448E-10	4.447E-10	4.446E-10	4.442E-10	4.432E-10	4.395E-10
Th-230	Th-230	2.100E-04	4.917E-06	4.917E-06	4.917E-06	4.916E-06	4.915E-06	4.911E-06	4.899E-06	4.858E-06
Th-230	ΣDOSE (j)		4.917E-06	4.917E-06	4.917E-06	4.917E-06	4.916E-06	4.912E-06	4.900E-06	4.859E-06
Ra-226	Th-230	2.100E-04	2.463E-07	7.379E-07	1.717E-06	5.101E-06	1.441E-05	4.314E-05	9.987E-05	1.636E-04
Ra-226	Th-230	3.989E-12	4.679E-15	1.402E-14	3.262E-14	9.691E-14	2.738E-13	8.197E-13	1.898E-12	3.109E-12
Ra-226	U-234	2.100E-04	7.544E-13	5.271E-12	2.775E-11	2.448E-10	1.982E-09	1.869E-08	1.134E-07	3.900E-07
Ra-226	U-234	2.771E-10	9.958E-19	6.958E-18	3.663E-17	3.231E-16	2.616E-15	2.467E-14	1.497E-13	5.149E-13
Ra-226	U-234	3.989E-12	1.433E-20	1.002E-19	5.273E-19	4.651E-18	3.765E-17	3.551E-16	2.155E-15	7.411E-15
Ra-226	U-238	3.359E-07	8.517E-22	1.275E-20	1.481E-19	3.863E-18	9.014E-17	2.737E-15	4.633E-14	3.991E-13
Ra-226	U-238	4.434E-13	1.124E-27	1.683E-26	1.955E-25	5.099E-24	1.190E-22	3.613E-21	6.115E-20	5.268E-19
Ra-226	U-238	6.383E-15	1.616E-29	2.419E-28	2.812E-27	7.339E-26	1.713E-24	5.200E-23	8.802E-22	7.583E-21
Ra-226	U-238	2.096E-04	5.314E-19	7.956E-18	9.240E-17	2.410E-15	5.625E-14	1.708E-12	2.891E-11	2.490E-10
Ra-226	U-238	2.767E-10	7.015E-25	1.050E-23	1.220E-22	3.182E-21	7.425E-20	2.254E-18	3.816E-17	3.287E-16
Ra-226	U-238	3.983E-12	1.010E-26	1.512E-25	1.756E-24	4.580E-23	1.069E-21	3.245E-20	5.492E-19	4.732E-18
Ra-226	ΣDOSE (j)		2.463E-07	7.379E-07	1.717E-06	5.101E-06	1.441E-05	4.316E-05	9.998E-05	1.640E-04

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	6.490E-12	6.490E-12	6.490E-12	6.490E-12	6.488E-12	6.483E-12	6.467E-12	6.413E-12
Th-230	Th-230	3.989E-12	9.342E-14	9.342E-14	9.342E-14	9.341E-14	9.339E-14	9.331E-14	9.309E-14	9.231E-14
Th-230	ΣDOSE(j)		6.584E-12	6.584E-12	6.584E-12	6.583E-12	6.582E-12	6.576E-12	6.560E-12	6.506E-12
Ra-226	Th-230	2.771E-10	3.251E-13	9.740E-13	2.266E-12	6.733E-12	1.902E-11	5.695E-11	1.318E-10	2.160E-10
Th-230	Th-230	1.998E-04	4.678E-06	4.678E-06	4.678E-06	4.678E-06	4.676E-06	4.673E-06	4.661E-06	4.622E-06
Th-230	Th-230	2.637E-10	6.175E-12	6.175E-12	6.175E-12	6.174E-12	6.173E-12	6.168E-12	6.153E-12	6.102E-12
Th-230	ΣDOSE(j)		4.678E-06	4.678E-06	4.678E-06	4.678E-06	4.676E-06	4.673E-06	4.661E-06	4.622E-06
Th-230	Th-230	3.795E-12	8.888E-14	8.888E-14	8.888E-14	8.887E-14	8.885E-14	8.878E-14	8.857E-14	8.783E-14
Th-230	Th-230	4.196E-08	9.826E-10	9.826E-10	9.826E-10	9.825E-10	9.823E-10	9.814E-10	9.791E-10	9.709E-10
Th-230	ΣDOSE(j)		9.827E-10	9.827E-10	9.827E-10	9.826E-10	9.824E-10	9.815E-10	9.792E-10	9.710E-10
Ra-226	Th-230	4.196E-08	4.692E-11	1.406E-10	3.271E-10	9.718E-10	2.745E-09	8.220E-09	1.903E-08	3.118E-08
Ra-226	Th-230	7.972E-16	8.915E-19	2.671E-18	6.215E-18	1.846E-17	5.216E-17	1.562E-16	3.615E-16	5.924E-16
Ra-226	U-234	4.196E-08	1.437E-16	1.004E-15	5.288E-15	4.663E-14	3.775E-13	3.560E-12	2.161E-11	7.431E-11
Ra-226	U-234	5.538E-14	1.897E-22	1.326E-21	6.980E-21	6.156E-20	4.983E-19	4.700E-18	2.852E-17	9.809E-17
Ra-226	U-234	7.972E-16	2.731E-24	1.908E-23	1.005E-22	8.860E-22	7.173E-21	6.765E-20	4.105E-19	1.412E-18
Ra-226	U-238	6.713E-11	1.623E-25	2.429E-24	2.821E-23	7.360E-22	1.717E-20	5.215E-19	8.826E-18	7.604E-17
Ra-226	U-238	8.862E-17	0.000E+00	3.202E-30	3.719E-29	9.702E-28	2.267E-26	6.883E-25	1.165E-23	1.004E-22
Ra-226	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	1.396E-29	3.259E-28	9.908E-27	1.677E-25	1.445E-24
Ra-226	U-238	4.189E-08	1.013E-22	1.516E-21	1.760E-20	4.592E-19	1.072E-17	3.254E-16	5.507E-15	4.745E-14
Ra-226	U-238	5.530E-14	1.335E-28	2.000E-27	2.324E-26	6.062E-25	1.415E-23	4.295E-22	7.270E-21	6.263E-20
Ra-226	U-238	7.959E-16	1.921E-30	2.876E-29	3.340E-28	8.726E-27	2.036E-25	6.182E-24	1.046E-22	9.015E-22
Ra-226	ΣDOSE(j)		4.692E-11	1.406E-10	3.271E-10	9.718E-10	2.745E-09	8.223E-09	1.905E-08	3.125E-08
Th-230	Th-230	5.538E-14	1.297E-15	1.297E-15	1.297E-15	1.297E-15	1.297E-15	1.296E-15	1.292E-15	1.282E-15
Th-230	Th-230	7.972E-16	1.867E-17	1.867E-17	1.867E-17	1.867E-17	1.866E-17	1.865E-17	1.860E-17	1.845E-17
Th-230	ΣDOSE(j)		1.316E-15	1.316E-15	1.316E-15	1.316E-15	1.315E-15	1.314E-15	1.311E-15	1.300E-15
Ra-226	Th-230	5.538E-14	6.193E-17	1.856E-16	4.318E-16	1.283E-15	3.623E-15	1.085E-14	2.512E-14	4.116E-14
Th-230	Th-230	2.000E-07	4.684E-09	4.684E-09	4.684E-09	4.683E-09	4.682E-09	4.678E-09	4.667E-09	4.628E-09
Th-230	Th-230	2.640E-13	6.183E-15	6.183E-15	6.182E-15	6.182E-15	6.180E-15	6.175E-15	6.160E-15	6.109E-15
Th-230	ΣDOSE(j)		4.684E-09	4.684E-09	4.684E-09	4.683E-09	4.682E-09	4.678E-09	4.667E-09	4.628E-09
Th-230	Th-230	3.800E-15	8.899E-17	8.899E-17	8.899E-17	8.898E-17	8.896E-17	8.889E-17	8.867E-17	8.793E-17
U-234	U-234	9.996E-01	2.743E-03	2.734E-03	2.716E-03	2.654E-03	2.483E-03	1.968E-03	1.013E-03	9.899E-05
U-234	U-234	1.319E-06	3.621E-09	3.609E-09	3.585E-09	3.503E-09	3.278E-09	2.598E-09	1.337E-09	1.307E-10
U-234	U-238	1.599E-03	6.193E-12	1.852E-11	4.294E-11	1.259E-10	3.421E-10	8.936E-10	1.375E-09	4.480E-10
U-234	U-238	2.111E-09	8.175E-18	2.445E-17	5.668E-17	1.662E-16	4.516E-16	1.180E-15	1.815E-15	5.914E-16
U-234	U-238	3.039E-11	1.177E-19	3.520E-19	8.159E-19	2.392E-18	6.501E-18	1.698E-17	2.613E-17	8.512E-18
U-234	U-238	3.359E-07	1.301E-15	3.891E-15	9.020E-15	2.644E-14	7.187E-14	1.877E-13	2.889E-13	9.410E-14
U-234	U-238	4.434E-13	1.717E-21	5.136E-21	1.191E-20	3.490E-20	9.486E-20	2.478E-19	3.813E-19	1.242E-19
U-234	U-238	6.383E-15	2.472E-23	7.393E-23	1.714E-22	5.023E-22	1.365E-21	3.566E-21	5.489E-21	1.788E-21
U-234	U-238	3.196E-07	1.238E-15	3.702E-15	8.582E-15	2.515E-14	6.837E-14	1.786E-13	2.748E-13	8.953E-14
U-234	U-238	4.219E-13	1.634E-21	4.887E-21	1.133E-20	3.320E-20	9.025E-20	2.357E-19	3.628E-19	1.182E-19

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr								
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-238	6.073E-15	2.351E-23	7.034E-23	1.630E-22	4.779E-22	1.299E-21	3.393E-21	5.222E-21	1.701E-21	
U-234	U-238	6.713E-11	2.600E-19	7.776E-19	1.802E-18	5.284E-18	1.436E-17	3.751E-17	5.773E-17	1.881E-17	
U-234	U-238	8.862E-17	3.431E-25	1.026E-24	2.379E-24	6.974E-24	1.896E-23	4.951E-23	7.620E-23	2.482E-23	
U-234	U-238	1.276E-18	4.939E-27	1.477E-26	3.425E-26	1.004E-25	2.729E-25	7.127E-25	1.097E-24	3.573E-25	
U-234	U-238	3.200E-10	1.239E-18	3.706E-18	8.592E-18	2.518E-17	6.846E-17	1.788E-16	2.752E-16	8.964E-17	
U-234	U-238	4.224E-16	1.636E-24	4.892E-24	1.134E-23	3.324E-23	9.036E-23	2.360E-22	3.632E-22	1.183E-22	
U-234	U-238	6.080E-18	2.354E-26	7.042E-26	1.632E-25	4.785E-25	1.301E-24	3.397E-24	5.228E-24	1.703E-24	
U-234	U-238	9.980E-01	3.864E-09	1.156E-08	2.680E-08	7.854E-08	2.135E-07	5.576E-07	8.582E-07	2.796E-07	
U-234	U-238	1.317E-06	5.101E-15	1.526E-14	3.537E-14	1.037E-13	2.818E-13	7.360E-13	1.133E-12	3.690E-13	
U-234	U-238	1.896E-08	7.342E-17	2.196E-16	5.091E-16	1.492E-15	4.056E-15	1.059E-14	1.631E-14	5.312E-15	
U-234	U-238	2.096E-04	8.117E-13	2.428E-12	5.628E-12	1.650E-11	4.484E-11	1.171E-10	1.803E-10	5.872E-11	
U-234	U-238	2.767E-10	1.071E-18	3.205E-18	7.429E-18	2.178E-17	5.919E-17	1.546E-16	2.379E-16	7.751E-17	
U-234	U-238	3.983E-12	1.542E-20	4.613E-20	1.069E-19	3.135E-19	8.520E-19	2.225E-18	3.425E-18	1.116E-18	
U-234	U-238	1.994E-04	7.723E-13	2.310E-12	5.355E-12	1.570E-11	4.267E-11	1.114E-10	1.715E-10	5.587E-11	
U-234	U-238	2.633E-10	1.019E-18	3.049E-18	7.068E-18	2.072E-17	5.632E-17	1.471E-16	2.264E-16	7.375E-17	
U-234	U-238	3.789E-12	1.467E-20	4.389E-20	1.017E-19	2.982E-19	8.106E-19	2.117E-18	3.258E-18	1.061E-18	
U-234	U-238	4.189E-08	1.622E-16	4.852E-16	1.125E-15	3.297E-15	8.962E-15	2.340E-14	3.602E-14	1.173E-14	
U-234	U-238	5.530E-14	2.141E-22	6.405E-22	1.485E-21	4.352E-21	1.183E-20	3.089E-20	4.755E-20	1.549E-20	
U-234	U-238	7.959E-16	3.082E-24	9.219E-24	2.137E-23	6.264E-23	1.703E-22	4.447E-22	6.844E-22	2.230E-22	
U-234	U-238	1.997E-07	7.732E-16	2.313E-15	5.361E-15	1.572E-14	4.272E-14	1.116E-13	1.717E-13	5.594E-14	
U-234	U-238	2.636E-13	1.021E-21	3.053E-21	7.077E-21	2.074E-20	5.639E-20	1.473E-19	2.267E-19	7.384E-20	
U-234	U-238	3.794E-15	1.469E-23	4.394E-23	1.019E-22	2.986E-22	8.116E-22	2.120E-21	3.262E-21	1.063E-21	
U-234	ΣDOSE(j)		2.743E-03	2.734E-03	2.716E-03	2.654E-03	2.483E-03	1.968E-03	1.014E-03	9.927E-05	
U-234	U-234	1.899E-08	5.212E-11	5.195E-11	5.161E-11	5.042E-11	4.718E-11	3.739E-11	1.924E-11	1.881E-12	
U-234	U-234	2.100E-04	5.762E-07	5.743E-07	5.705E-07	5.574E-07	5.216E-07	4.134E-07	2.127E-07	2.079E-08	
U-234	ΣDOSE(j)		5.763E-07	5.744E-07	5.706E-07	5.574E-07	5.216E-07	4.134E-07	2.127E-07	2.079E-08	
U-234	U-234	2.771E-10	7.606E-13	7.581E-13	7.531E-13	7.358E-13	6.885E-13	5.456E-13	2.808E-13	2.744E-14	
U-234	U-234	3.989E-12	1.095E-14	1.091E-14	1.084E-14	1.059E-14	9.910E-15	7.854E-15	4.041E-15	3.950E-16	
U-234	ΣDOSE(j)		7.716E-13	7.690E-13	7.639E-13	7.464E-13	6.984E-13	5.535E-13	2.848E-13	2.784E-14	
U-234	U-234	1.998E-04	5.482E-07	5.464E-07	5.428E-07	5.303E-07	4.962E-07	3.933E-07	2.024E-07	1.978E-08	
U-234	U-234	2.637E-10	7.237E-13	7.213E-13	7.165E-13	7.000E-13	6.550E-13	5.191E-13	2.671E-13	2.611E-14	
U-234	ΣDOSE(j)		5.482E-07	5.464E-07	5.428E-07	5.303E-07	4.962E-07	3.933E-07	2.024E-07	1.978E-08	
U-234	U-234	3.795E-12	1.042E-14	1.038E-14	1.031E-14	1.008E-14	9.428E-15	7.472E-15	3.845E-15	3.758E-16	
U-234	U-234	4.196E-08	1.152E-10	1.148E-10	1.140E-10	1.114E-10	1.042E-10	8.260E-11	4.251E-11	4.155E-12	
U-234	ΣDOSE(j)		1.152E-10	1.148E-10	1.140E-10	1.114E-10	1.042E-10	8.261E-11	4.251E-11	4.155E-12	
U-234	U-234	5.538E-14	1.520E-16	1.515E-16	1.505E-16	1.470E-16	1.376E-16	1.090E-16	5.611E-17	5.485E-18	
U-234	U-234	7.972E-16	2.188E-18	2.181E-18	2.166E-18	2.116E-18	1.980E-18	1.569E-18	8.076E-19	7.894E-20	
U-234	ΣDOSE(j)		1.542E-16	1.537E-16	1.527E-16	1.492E-16	1.396E-16	1.106E-16	5.692E-17	5.563E-18	
U-234	U-234	2.000E-07	5.489E-10	5.471E-10	5.435E-10	5.310E-10	4.968E-10	3.937E-10	2.026E-10	1.981E-11	
U-234	U-234	2.640E-13	7.245E-16	7.221E-16	7.174E-16	7.009E-16	6.558E-16	5.197E-16	2.675E-16	2.614E-17	
U-234	ΣDOSE(j)		5.489E-10	5.471E-10	5.435E-10	5.310E-10	4.968E-10	3.937E-10	2.026E-10	1.981E-11	
U-234	U-234	3.800E-15	1.043E-17	1.039E-17	1.033E-17	1.009E-17	9.440E-18	7.481E-18	3.850E-18	3.763E-19	

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	1.285E-09	1.281E-09	1.272E-09	1.243E-09	1.163E-09	9.221E-10	4.748E-10	4.650E-11
U-238	U-238	1.599E-03	2.675E-03	2.666E-03	2.649E-03	2.588E-03	2.422E-03	1.920E-03	9.883E-04	9.680E-05
U-238	ΣDOSE(j)		2.675E-03	2.666E-03	2.649E-03	2.588E-03	2.422E-03	1.920E-03	9.883E-04	9.680E-05
U-238	U-238	2.111E-09	3.531E-09	3.519E-09	3.496E-09	3.416E-09	3.196E-09	2.534E-09	1.305E-09	1.278E-10
U-238	U-238	3.039E-11	5.083E-11	5.066E-11	5.032E-11	4.917E-11	4.601E-11	3.647E-11	1.878E-11	1.839E-12
U-238	ΣDOSE(j)		3.582E-09	3.570E-09	3.546E-09	3.465E-09	3.242E-09	2.570E-09	1.323E-09	1.296E-10
U-238	U-238	3.359E-07	5.619E-07	5.600E-07	5.563E-07	5.435E-07	5.086E-07	4.032E-07	2.076E-07	2.033E-08
U-238	U-238	4.434E-13	7.417E-13	7.392E-13	7.344E-13	7.175E-13	6.714E-13	5.322E-13	2.740E-13	2.684E-14
U-238	ΣDOSE(j)		5.619E-07	5.600E-07	5.563E-07	5.435E-07	5.086E-07	4.032E-07	2.076E-07	2.033E-08
U-238	U-238	6.383E-15	1.068E-14	1.064E-14	1.057E-14	1.033E-14	9.664E-15	7.661E-15	3.944E-15	3.863E-16
U-238	U-238	3.196E-07	5.346E-07	5.328E-07	5.293E-07	5.171E-07	4.839E-07	3.836E-07	1.975E-07	1.934E-08
U-238	ΣDOSE(j)		5.346E-07	5.328E-07	5.293E-07	5.171E-07	4.839E-07	3.836E-07	1.975E-07	1.934E-08
U-238	U-238	4.219E-13	7.057E-13	7.033E-13	6.987E-13	6.826E-13	6.388E-13	5.064E-13	2.607E-13	2.553E-14
U-238	U-238	6.073E-15	1.016E-14	1.012E-14	1.006E-14	9.826E-15	9.195E-15	7.288E-15	3.753E-15	3.675E-16
U-238	ΣDOSE(j)		7.158E-13	7.135E-13	7.087E-13	6.925E-13	6.480E-13	5.136E-13	2.645E-13	2.590E-14
U-238	U-238	6.713E-11	1.123E-10	1.119E-10	1.112E-10	1.086E-10	1.016E-10	8.057E-11	4.149E-11	4.063E-12
U-238	U-238	8.862E-17	1.482E-16	1.477E-16	1.468E-16	1.434E-16	1.342E-16	1.064E-16	5.476E-17	5.363E-18
U-238	ΣDOSE(j)		1.123E-10	1.119E-10	1.112E-10	1.086E-10	1.016E-10	8.057E-11	4.149E-11	4.063E-12
U-238	U-238	1.276E-18	2.133E-18	2.126E-18	2.112E-18	2.064E-18	1.931E-18	1.531E-18	7.882E-19	7.720E-20
U-238	U-238	3.200E-10	5.352E-10	5.335E-10	5.299E-10	5.178E-10	4.845E-10	3.841E-10	1.977E-10	1.937E-11
U-238	ΣDOSE(j)		5.352E-10	5.335E-10	5.299E-10	5.178E-10	4.845E-10	3.841E-10	1.977E-10	1.937E-11
U-238	U-238	4.224E-16	7.065E-16	7.042E-16	6.995E-16	6.835E-16	6.396E-16	5.070E-16	2.610E-16	2.556E-17
U-238	U-238	6.080E-18	1.017E-17	1.014E-17	1.007E-17	9.838E-18	9.206E-18	7.297E-18	3.757E-18	3.680E-19
U-238	ΣDOSE(j)		7.167E-16	7.143E-16	7.096E-16	6.933E-16	6.488E-16	5.143E-16	2.648E-16	2.593E-17
U-238	U-238	9.980E-01	3.203E-02	3.192E-02	3.171E-02	3.098E-02	2.899E-02	2.298E-02	1.183E-02	1.159E-03
U-238	U-238	1.317E-06	4.228E-08	4.214E-08	4.186E-08	4.090E-08	3.827E-08	3.034E-08	1.562E-08	1.530E-09
U-238	ΣDOSE(j)		3.203E-02	3.192E-02	3.171E-02	3.098E-02	2.899E-02	2.298E-02	1.183E-02	1.159E-03
U-238	U-238	1.896E-08	6.086E-10	6.065E-10	6.025E-10	5.887E-10	5.509E-10	4.367E-10	2.248E-10	2.202E-11
U-238	U-238	2.096E-04	6.728E-06	6.705E-06	6.661E-06	6.508E-06	6.090E-06	4.827E-06	2.486E-06	2.434E-07
U-238	ΣDOSE(j)		6.728E-06	6.706E-06	6.662E-06	6.509E-06	6.091E-06	4.828E-06	2.486E-06	2.435E-07
U-238	U-238	2.767E-10	8.880E-12	8.851E-12	8.792E-12	8.591E-12	8.039E-12	6.372E-12	3.281E-12	3.213E-13
U-238	U-238	3.983E-12	1.278E-13	1.274E-13	1.266E-13	1.237E-13	1.157E-13	9.172E-14	4.722E-14	4.625E-15
U-238	ΣDOSE(j)		9.008E-12	8.978E-12	8.919E-12	8.714E-12	8.155E-12	6.464E-12	3.328E-12	3.260E-13
U-238	U-238	1.994E-04	6.401E-06	6.380E-06	6.337E-06	6.192E-06	5.794E-06	4.593E-06	2.365E-06	2.316E-07
U-238	U-238	2.633E-10	8.449E-12	8.421E-12	8.365E-12	8.173E-12	7.648E-12	6.063E-12	3.121E-12	3.057E-13
U-238	ΣDOSE(j)		6.401E-06	6.380E-06	6.337E-06	6.192E-06	5.794E-06	4.593E-06	2.365E-06	2.316E-07
U-238	U-238	3.789E-12	1.216E-13	1.212E-13	1.204E-13	1.176E-13	1.101E-13	8.726E-14	4.493E-14	4.401E-15

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	1.344E-09	1.340E-09	1.331E-09	1.301E-09	1.217E-09	9.647E-10	4.967E-10	4.865E-11
U-238	ΣDOSE(j)		1.345E-09	1.340E-09	1.331E-09	1.301E-09	1.217E-09	9.648E-10	4.968E-10	4.865E-11
U-238	U-238	5.530E-14	1.775E-15	1.769E-15	1.757E-15	1.717E-15	1.606E-15	1.273E-15	6.557E-16	6.421E-17
U-238	U-238	7.959E-16	2.554E-17	2.546E-17	2.529E-17	2.471E-17	2.312E-17	1.833E-17	9.437E-18	9.243E-19
U-238	ΣDOSE(j)		1.800E-15	1.794E-15	1.782E-15	1.741E-15	1.630E-15	1.292E-15	6.651E-16	6.514E-17
U-238	U-238	1.997E-07	6.409E-09	6.387E-09	6.345E-09	6.199E-09	5.801E-09	4.598E-09	2.368E-09	2.319E-10
U-238	U-238	2.636E-13	8.459E-15	8.431E-15	8.375E-15	8.183E-15	7.658E-15	6.070E-15	3.125E-15	3.061E-16
U-238	ΣDOSE(j)		6.409E-09	6.387E-09	6.345E-09	6.199E-09	5.801E-09	4.598E-09	2.368E-09	2.319E-10
U-238	U-238	3.794E-15	1.218E-16	1.214E-16	1.206E-16	1.178E-16	1.102E-16	8.737E-17	4.499E-17	4.406E-18

THF(i) is the thread fraction of the parent nuclide.

Summary : Recreator (Outdoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	1.000E+00	9.676E-01	9.061E-01	7.197E-01	3.728E-01	3.731E-02	5.192E-05	5.222E-15
Pb-210	Pb-210	1.320E-06	1.320E-06	1.277E-06	1.196E-06	9.501E-07	4.922E-07	4.924E-08	6.854E-11	6.893E-21
Pb-210	Ra-226	9.996E-01	0.000E+00	3.066E-02	8.878E-02	2.621E-01	5.669E-01	7.450E-01	4.470E-01	6.266E-02
Pb-210	Ra-226	2.100E-04	0.000E+00	6.440E-06	1.865E-05	5.505E-05	1.191E-04	1.565E-04	9.388E-05	1.316E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	6.127E-06	1.774E-05	5.237E-05	1.133E-04	1.489E-04	8.932E-05	1.252E-05
Pb-210	Ra-226	4.196E-08	0.000E+00	1.287E-09	3.727E-09	1.100E-08	2.380E-08	3.127E-08	1.876E-08	2.630E-09
Pb-210	Ra-226	2.000E-07	0.000E+00	6.134E-09	1.776E-08	5.244E-08	1.134E-07	1.491E-07	8.943E-08	1.254E-08
Pb-210	Th-230	9.996E-01	0.000E+00	6.681E-06	5.872E-05	6.018E-04	4.360E-03	2.602E-02	7.734E-02	1.357E-01
Pb-210	Th-230	2.100E-04	0.000E+00	1.403E-09	1.233E-08	1.264E-07	9.158E-07	5.466E-06	1.624E-05	2.850E-05
Pb-210	Th-230	1.998E-04	0.000E+00	1.335E-09	1.174E-08	1.203E-07	8.713E-07	5.200E-06	1.546E-05	2.712E-05
Pb-210	Th-230	4.196E-08	0.000E+00	2.804E-13	2.465E-12	2.526E-11	1.830E-10	1.092E-09	3.246E-09	5.696E-09
Pb-210	Th-230	2.000E-07	0.000E+00	1.337E-12	1.175E-11	1.204E-10	8.724E-10	5.206E-09	1.547E-08	2.715E-08
Pb-210	U-234	9.996E-01	0.000E+00	2.052E-11	5.434E-10	1.883E-08	4.240E-07	9.087E-06	8.090E-05	3.195E-04
Pb-210	U-234	2.100E-04	0.000E+00	4.310E-15	1.141E-13	3.955E-12	8.905E-11	1.909E-09	1.699E-08	6.712E-08
Pb-210	U-234	1.998E-04	0.000E+00	4.101E-15	1.086E-13	3.763E-12	8.473E-11	1.816E-09	1.617E-08	6.386E-08
Pb-210	U-234	4.196E-08	0.000E+00	8.614E-19	2.281E-17	7.903E-16	1.780E-14	3.814E-13	3.396E-12	1.341E-11
Pb-210	U-234	2.000E-07	0.000E+00	4.106E-18	1.087E-16	3.767E-15	8.483E-14	1.818E-12	1.619E-11	6.394E-11
Pb-210	U-238	1.599E-03	0.000E+00	2.320E-20	1.848E-18	2.153E-16	1.486E-14	1.116E-12	3.044E-11	3.212E-10
Pb-210	U-238	3.359E-07	0.000E+00	4.874E-24	3.882E-22	4.522E-20	3.121E-18	2.343E-16	6.394E-15	6.746E-14
Pb-210	U-238	3.196E-07	0.000E+00	4.637E-24	3.693E-22	4.302E-20	2.970E-18	2.229E-16	6.084E-15	6.419E-14
Pb-210	U-238	6.713E-11	0.000E+00	9.740E-28	7.758E-26	9.036E-24	6.238E-22	4.683E-20	1.278E-18	1.348E-17
Pb-210	U-238	3.200E-10	0.000E+00	4.643E-27	3.698E-25	4.307E-23	2.973E-21	2.232E-19	6.091E-18	6.426E-17
Pb-210	U-238	9.980E-01	0.000E+00	1.448E-17	1.153E-15	1.343E-13	9.273E-12	6.961E-10	1.900E-08	2.004E-07
Pb-210	U-238	2.096E-04	0.000E+00	3.041E-21	2.422E-19	2.822E-17	1.948E-15	1.462E-13	3.990E-12	4.210E-11
Pb-210	U-238	1.994E-04	0.000E+00	2.894E-21	2.305E-19	2.685E-17	1.853E-15	1.391E-13	3.796E-12	4.005E-11
Pb-210	U-238	4.189E-08	0.000E+00	6.078E-25	4.841E-23	5.639E-21	3.893E-19	2.922E-17	7.974E-16	8.413E-15
Pb-210	U-238	1.997E-07	0.000E+00	2.897E-24	2.308E-22	2.688E-20	1.855E-18	1.393E-16	3.801E-15	4.010E-14
Pb-210	ΣS(j):		1.000E+00	9.983E-01	9.949E-01	9.825E-01	9.444E-01	8.086E-01	5.246E-01	1.988E-01
Po-210	Pb-210	1.000E+00	0.000E+00	8.172E-01	9.104E-01	7.263E-01	3.763E-01	3.765E-02	5.240E-05	5.269E-15
Po-210	Po-210	1.000E+00	1.000E+00	1.579E-01	3.935E-03	9.623E-09	8.911E-25	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	0.000E+00	1.660E-02	7.271E-02	2.479E-01	5.564E-01	7.389E-01	4.437E-01	6.220E-02
Po-210	Ra-226	2.100E-04	0.000E+00	3.486E-06	1.527E-05	5.206E-05	1.169E-04	1.552E-04	9.319E-05	1.307E-05
Po-210	Ra-226	1.998E-04	0.000E+00	3.317E-06	1.453E-05	4.953E-05	1.112E-04	1.477E-04	8.867E-05	1.243E-05
Po-210	Ra-226	4.196E-08	0.000E+00	6.967E-10	3.052E-09	1.040E-08	2.336E-08	3.101E-08	1.862E-08	2.611E-09
Po-210	Ra-226	2.000E-07	0.000E+00	3.321E-09	1.455E-08	4.959E-08	1.113E-07	1.478E-07	8.877E-08	1.245E-08
Po-210	Th-230	9.996E-01	0.000E+00	2.726E-06	4.114E-05	5.383E-04	4.191E-03	2.562E-02	7.655E-02	1.345E-01
Po-210	Th-230	2.100E-04	0.000E+00	5.727E-10	8.641E-09	1.131E-07	8.803E-07	5.381E-06	1.608E-05	2.825E-05
Po-210	Th-230	1.998E-04	0.000E+00	5.448E-10	8.221E-09	1.076E-07	8.375E-07	5.120E-06	1.530E-05	2.687E-05
Po-210	Th-230	4.196E-08	0.000E+00	1.144E-13	1.727E-12	2.260E-11	1.759E-10	1.075E-09	3.213E-09	5.645E-09
Po-210	Th-230	2.000E-07	0.000E+00	5.455E-13	8.231E-12	1.077E-10	8.386E-10	5.126E-09	1.532E-08	2.691E-08
Po-210	U-234	9.996E-01	0.000E+00	6.770E-12	3.343E-10	1.601E-08	4.001E-07	8.895E-06	7.995E-05	3.166E-04
Po-210	U-234	2.100E-04	0.000E+00	1.422E-15	7.021E-14	3.363E-12	8.403E-11	1.868E-09	1.679E-08	6.650E-08
Po-210	U-234	1.998E-04	0.000E+00	1.353E-15	6.680E-14	3.199E-12	7.995E-11	1.778E-09	1.598E-08	6.327E-08
Po-210	U-234	4.196E-08	0.000E+00	2.842E-19	1.403E-17	6.720E-16	1.679E-14	3.734E-13	3.356E-12	1.329E-11
Po-210	U-234	2.000E-07	0.000E+00	1.355E-18	6.688E-17	3.203E-15	8.005E-14	1.780E-12	1.600E-11	6.335E-11
Po-210	U-238	1.599E-03	0.000E+00	6.444E-21	1.016E-18	1.745E-16	1.378E-14	1.086E-12	3.003E-11	3.181E-10
Po-210	U-238	3.359E-07	0.000E+00	1.353E-24	2.133E-22	3.666E-20	2.893E-18	2.281E-16	6.308E-15	6.682E-14
Po-210	U-238	3.196E-07	0.000E+00	1.288E-24	2.030E-22	3.487E-20	2.753E-18	2.170E-16	6.002E-15	6.358E-14

Summary : Recreator (Outdoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	0.000E+00	2.705E-28	4.263E-26	7.325E-24	5.782E-22	4.558E-20	1.261E-18	1.335E-17
Po-210	U-238	3.200E-10	0.000E+00	1.289E-27	2.032E-25	3.492E-23	2.756E-21	2.173E-19	6.009E-18	6.366E-17
Po-210	U-238	9.980E-01	0.000E+00	4.021E-18	6.337E-16	1.089E-13	8.596E-12	6.776E-10	1.874E-08	1.985E-07
Po-210	U-238	2.096E-04	0.000E+00	8.445E-22	1.331E-19	2.287E-17	1.806E-15	1.423E-13	3.936E-12	4.170E-11
Po-210	U-238	1.994E-04	0.000E+00	8.035E-22	1.266E-19	2.176E-17	1.718E-15	1.354E-13	3.745E-12	3.967E-11
Po-210	U-238	4.189E-08	0.000E+00	1.688E-25	2.660E-23	4.571E-21	3.608E-19	2.844E-17	7.866E-16	8.333E-15
Po-210	U-238	1.997E-07	0.000E+00	8.045E-25	1.268E-22	2.179E-20	1.720E-18	1.356E-16	3.750E-15	3.972E-14
Po-210	ΣS(j):		1.000E+00	9.917E-01	9.871E-01	9.748E-01	9.371E-01	8.024E-01	5.206E-01	1.971E-01
Pb-210	Pb-210	1.900E-08	1.900E-08	1.839E-08	1.722E-08	1.368E-08	7.084E-09	7.088E-10	9.865E-13	9.921E-23
Pb-210	Ra-226	1.899E-08	0.000E+00	5.825E-10	1.687E-09	4.979E-09	1.077E-08	1.415E-08	8.492E-09	1.191E-09
Pb-210	Ra-226	3.989E-12	0.000E+00	1.224E-13	3.543E-13	1.046E-12	2.263E-12	2.973E-12	1.784E-12	2.501E-13
Pb-210	Ra-226	3.795E-12	0.000E+00	1.164E-13	3.371E-13	9.951E-13	2.153E-12	2.829E-12	1.697E-12	2.379E-13
Pb-210	Ra-226	7.972E-16	0.000E+00	2.445E-17	7.080E-17	2.090E-16	4.521E-16	5.941E-16	3.565E-16	4.997E-17
Pb-210	Ra-226	3.800E-15	0.000E+00	1.166E-16	3.375E-16	9.963E-16	2.155E-15	2.832E-15	1.699E-15	2.382E-16
Pb-210	Th-230	1.899E-08	0.000E+00	1.269E-13	1.116E-12	1.143E-11	8.284E-11	4.944E-10	1.469E-09	2.578E-09
Pb-210	Th-230	3.989E-12	0.000E+00	2.666E-17	2.344E-16	2.402E-15	1.740E-14	1.038E-13	3.087E-13	5.415E-13
Pb-210	Th-230	3.795E-12	0.000E+00	2.537E-17	2.230E-16	2.285E-15	1.656E-14	9.880E-14	2.937E-13	5.152E-13
Pb-210	Th-230	7.972E-16	0.000E+00	5.328E-21	4.683E-20	4.800E-19	3.477E-18	2.075E-17	6.168E-17	1.082E-16
Pb-210	Th-230	3.800E-15	0.000E+00	2.540E-20	2.232E-19	2.288E-18	1.658E-17	9.892E-17	2.940E-16	5.158E-16
Pb-210	U-234	1.899E-08	0.000E+00	3.899E-19	1.033E-17	3.577E-16	8.056E-15	1.727E-13	1.537E-12	6.071E-12
Pb-210	U-234	3.989E-12	0.000E+00	8.189E-23	2.169E-21	7.514E-20	1.692E-18	3.627E-17	3.229E-16	1.275E-15
Pb-210	U-234	3.795E-12	0.000E+00	7.792E-23	2.063E-21	7.149E-20	1.610E-18	3.450E-17	3.072E-16	1.213E-15
Pb-210	U-234	7.972E-16	0.000E+00	1.637E-26	4.334E-25	1.502E-23	3.381E-22	7.247E-21	6.452E-20	2.548E-19
Pb-210	U-234	3.800E-15	0.000E+00	7.801E-26	2.066E-24	7.158E-23	1.612E-21	3.455E-20	3.076E-19	1.215E-18
Pb-210	U-238	3.039E-11	0.000E+00	4.409E-28	3.512E-26	4.090E-24	2.824E-22	2.120E-20	5.784E-19	6.103E-18
Pb-210	U-238	6.383E-15	0.000E+00	9.261E-32	7.376E-30	8.592E-28	5.931E-26	4.452E-24	1.215E-22	1.282E-21
Pb-210	U-238	6.073E-15	0.000E+00	8.811E-32	7.018E-30	8.174E-28	5.643E-26	4.236E-24	1.156E-22	1.220E-21
Pb-210	U-238	1.276E-18	0.000E+00	1.851E-35	1.474E-33	1.717E-31	1.185E-29	8.897E-28	2.428E-26	2.562E-25
Pb-210	U-238	6.080E-18	0.000E+00	8.821E-35	7.026E-33	8.184E-31	5.650E-29	4.241E-27	1.157E-25	1.221E-24
Pb-210	U-238	1.896E-08	0.000E+00	2.751E-25	2.191E-23	2.552E-21	1.762E-19	1.323E-17	3.609E-16	3.808E-15
Pb-210	U-238	3.983E-12	0.000E+00	5.779E-29	4.603E-27	5.361E-25	3.701E-23	2.778E-21	7.581E-20	7.999E-19
Pb-210	U-238	3.789E-12	0.000E+00	5.498E-29	4.379E-27	5.101E-25	3.521E-23	2.643E-21	7.213E-20	7.610E-19
Pb-210	U-238	7.959E-16	0.000E+00	1.155E-32	9.198E-31	1.071E-28	7.396E-27	5.552E-25	1.515E-23	1.598E-22
Pb-210	U-238	3.794E-15	0.000E+00	5.505E-32	4.384E-30	5.107E-28	3.525E-26	2.646E-24	7.222E-23	7.619E-22
Pb-210	ΣS(j):		1.900E-08	1.897E-08	1.890E-08	1.867E-08	1.794E-08	1.536E-08	9.968E-09	3.776E-09
Ra-226	Ra-226	9.996E-01	9.996E-01	9.968E-01	9.912E-01	9.719E-01	9.189E-01	7.550E-01	4.306E-01	6.037E-02
Ra-226	Ra-226	1.319E-06	1.319E-06	1.316E-06	1.308E-06	1.283E-06	1.213E-06	9.965E-07	5.684E-07	7.968E-08
Ra-226	Th-230	9.996E-01	0.000E+00	4.324E-04	1.294E-03	4.270E-03	1.246E-02	3.773E-02	8.763E-02	1.437E-01
Ra-226	Th-230	1.319E-06	0.000E+00	5.708E-10	1.708E-09	5.636E-09	1.644E-08	4.981E-08	1.157E-07	1.897E-07
Ra-226	Th-230	1.899E-08	0.000E+00	8.216E-12	2.458E-11	8.113E-11	2.367E-10	7.169E-10	1.665E-09	2.731E-09
Ra-226	U-234	9.996E-01	0.000E+00	1.987E-09	1.781E-08	1.951E-07	1.686E-06	1.627E-05	9.938E-05	3.425E-04
Ra-226	U-234	1.319E-06	0.000E+00	2.623E-15	2.351E-14	2.575E-13	2.225E-12	2.147E-11	1.312E-10	4.521E-10
Ra-226	U-234	1.899E-08	0.000E+00	3.775E-17	3.384E-16	3.706E-15	3.203E-14	3.091E-13	1.888E-12	6.508E-12
Ra-226	U-238	1.599E-03	0.000E+00	2.991E-18	8.038E-17	2.928E-15	7.542E-14	2.371E-12	4.053E-11	3.504E-10
Ra-226	U-238	2.111E-09	0.000E+00	3.948E-24	1.061E-22	3.865E-21	9.955E-20	3.130E-18	5.351E-17	4.625E-16
Ra-226	U-238	3.039E-11	0.000E+00	5.683E-26	1.527E-24	5.563E-23	1.433E-21	4.505E-20	7.701E-19	6.657E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.866E-15	5.015E-14	1.827E-12	4.706E-11	1.480E-09	2.529E-08	2.186E-07

Summary : Recreator (Outdoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	0.000E+00	2.464E-21	6.620E-20	2.412E-18	6.212E-17	1.953E-15	3.339E-14	2.886E-13	
Ra-226	U-238	1.896E-08	0.000E+00	3.546E-23	9.529E-22	3.471E-20	8.941E-19	2.811E-17	4.806E-16	4.154E-15	
Ra-226	ΣS(j):		9.996E-01	9.972E-01	9.925E-01	9.762E-01	9.313E-01	7.927E-01	5.184E-01	2.044E-01	
Pb-210	Ra-226	1.319E-06	0.000E+00	4.047E-08	1.172E-07	3.459E-07	7.484E-07	9.833E-07	5.900E-07	8.271E-08	
Pb-210	Ra-226	2.771E-10	0.000E+00	8.501E-12	2.461E-11	7.266E-11	1.572E-10	2.065E-10	1.239E-10	1.737E-11	
Pb-210	Ra-226	2.637E-10	0.000E+00	8.088E-12	2.342E-11	6.913E-11	1.496E-10	1.965E-10	1.179E-10	1.653E-11	
Pb-210	Ra-226	5.538E-14	0.000E+00	1.699E-15	4.919E-15	1.452E-14	3.141E-14	4.128E-14	2.476E-14	3.472E-15	
Pb-210	Ra-226	2.640E-13	0.000E+00	8.097E-15	2.345E-14	6.922E-14	1.497E-13	1.967E-13	1.180E-13	1.655E-14	
Pb-210	Th-230	1.319E-06	0.000E+00	8.818E-12	7.752E-11	7.944E-10	5.755E-09	3.435E-08	1.021E-07	1.791E-07	
Pb-210	Th-230	2.771E-10	0.000E+00	1.852E-15	1.628E-14	1.669E-13	1.209E-12	7.215E-12	2.144E-11	3.762E-11	
Pb-210	Th-230	2.637E-10	0.000E+00	1.762E-15	1.549E-14	1.588E-13	1.150E-12	6.864E-12	2.040E-11	3.579E-11	
Pb-210	Th-230	5.538E-14	0.000E+00	3.702E-19	3.254E-18	3.335E-17	2.416E-16	1.442E-15	4.285E-15	7.518E-15	
Pb-210	Th-230	2.640E-13	0.000E+00	1.764E-18	1.551E-17	1.589E-16	1.152E-15	6.872E-15	2.043E-14	3.584E-14	
Pb-210	U-234	1.319E-06	0.000E+00	2.709E-17	7.173E-16	2.485E-14	5.597E-13	1.200E-11	1.068E-10	4.218E-10	
Pb-210	U-234	2.771E-10	0.000E+00	5.689E-21	1.507E-19	5.220E-18	1.176E-16	2.519E-15	2.243E-14	8.860E-14	
Pb-210	U-234	2.637E-10	0.000E+00	5.413E-21	1.433E-19	4.967E-18	1.118E-16	2.397E-15	2.134E-14	8.429E-14	
Pb-210	U-234	5.538E-14	0.000E+00	1.137E-24	3.011E-23	1.043E-21	2.349E-20	5.035E-19	4.483E-18	1.771E-17	
Pb-210	U-234	2.640E-13	0.000E+00	5.420E-24	1.435E-22	4.973E-21	1.120E-19	2.400E-18	2.137E-17	8.439E-17	
Pb-210	U-238	2.111E-09	0.000E+00	3.063E-26	2.440E-24	2.842E-22	1.962E-20	1.473E-18	4.019E-17	4.240E-16	
Pb-210	U-238	4.434E-13	0.000E+00	6.434E-30	5.124E-28	5.969E-26	4.120E-24	3.093E-22	8.441E-21	8.905E-20	
Pb-210	U-238	4.219E-13	0.000E+00	6.121E-30	4.875E-28	5.679E-26	3.920E-24	2.943E-22	8.031E-21	8.473E-20	
Pb-210	U-238	8.862E-17	0.000E+00	1.286E-33	1.024E-31	1.193E-29	8.234E-28	6.181E-26	1.687E-24	1.780E-23	
Pb-210	U-238	4.224E-16	0.000E+00	6.129E-33	4.881E-31	5.686E-29	3.925E-27	2.946E-25	8.040E-24	8.483E-23	
Pb-210	U-238	1.317E-06	0.000E+00	1.911E-23	1.522E-21	1.773E-19	1.224E-17	9.189E-16	2.508E-14	2.646E-13	
Pb-210	U-238	2.767E-10	0.000E+00	4.015E-27	3.198E-25	3.725E-23	2.571E-21	1.930E-19	5.267E-18	5.557E-17	
Pb-210	U-238	2.633E-10	0.000E+00	3.820E-27	3.042E-25	3.544E-23	2.446E-21	1.836E-19	5.011E-18	5.287E-17	
Pb-210	U-238	5.530E-14	0.000E+00	8.023E-31	6.390E-29	7.443E-27	5.138E-25	3.857E-23	1.053E-21	1.110E-20	
Pb-210	U-238	2.636E-13	0.000E+00	3.824E-30	3.046E-28	3.548E-26	2.449E-24	1.838E-22	5.017E-21	5.293E-20	
Pb-210	ΣS(j):		0.000E+00	4.050E-08	1.173E-07	3.469E-07	7.544E-07	1.018E-06	6.925E-07	2.624E-07	
Ra-226	Ra-226	1.899E-08	1.899E-08	1.894E-08	1.883E-08	1.847E-08	1.746E-08	1.434E-08	8.182E-09	1.147E-09	
Ra-226	Ra-226	2.100E-04	2.100E-04	2.094E-04	2.082E-04	2.041E-04	1.930E-04	1.586E-04	9.045E-05	1.268E-05	
Ra-226	ΣS(j):		2.100E-04	2.094E-04	2.082E-04	2.042E-04	1.930E-04	1.586E-04	9.046E-05	1.268E-05	
Ra-226	Ra-226	2.771E-10	2.771E-10	2.764E-10	2.748E-10	2.695E-10	2.548E-10	2.093E-10	1.194E-10	1.674E-11	
Ra-226	Ra-226	3.989E-12	3.989E-12	3.978E-12	3.956E-12	3.879E-12	3.667E-12	3.013E-12	1.719E-12	2.409E-13	
Ra-226	ΣS(j):		2.811E-10	2.803E-10	2.788E-10	2.734E-10	2.584E-10	2.123E-10	1.211E-10	1.698E-11	
Ra-226	Ra-226	1.998E-04	1.998E-04	1.992E-04	1.981E-04	1.942E-04	1.836E-04	1.509E-04	8.606E-05	1.206E-05	
Ra-226	Ra-226	2.637E-10	2.637E-10	2.629E-10	2.615E-10	2.564E-10	2.424E-10	1.991E-10	1.136E-10	1.592E-11	
Ra-226	Th-230	1.998E-04	0.000E+00	8.642E-08	2.585E-07	8.533E-07	2.489E-06	7.541E-06	1.751E-05	2.872E-05	
Ra-226	Th-230	2.637E-10	0.000E+00	1.141E-13	3.412E-13	1.126E-12	3.286E-12	9.954E-12	2.312E-11	3.792E-11	
Ra-226	Th-230	3.795E-12	0.000E+00	1.642E-15	4.912E-15	1.621E-14	4.730E-14	1.433E-13	3.327E-13	5.458E-13	
Ra-226	U-234	1.998E-04	0.000E+00	3.971E-13	3.559E-12	3.898E-11	3.368E-10	3.251E-09	1.986E-08	6.845E-08	
Ra-226	U-234	2.637E-10	0.000E+00	5.241E-19	4.698E-18	5.146E-17	4.446E-16	4.291E-15	2.622E-14	9.036E-14	
Ra-226	U-234	3.795E-12	0.000E+00	7.544E-21	6.762E-20	7.407E-19	6.400E-18	6.177E-17	3.773E-16	1.301E-15	
Ra-226	U-238	3.196E-07	0.000E+00	5.977E-22	1.606E-20	5.851E-19	1.507E-17	4.739E-16	8.100E-15	7.002E-14	
Ra-226	U-238	4.219E-13	0.000E+00	7.890E-28	2.120E-26	7.724E-25	1.989E-23	6.255E-22	1.069E-20	9.243E-20	

Summary : Recreator (Outdoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	0.000E+00	1.136E-29	3.052E-28	1.112E-26	2.864E-25	9.003E-24	1.539E-22	1.330E-21
Ra-226	U-238	1.994E-04	0.000E+00	3.730E-19	1.002E-17	3.651E-16	9.404E-15	2.957E-13	5.055E-12	4.369E-11
Ra-226	U-238	2.633E-10	0.000E+00	4.923E-25	1.323E-23	4.820E-22	1.241E-20	3.903E-19	6.672E-18	5.768E-17
Ra-226	U-238	3.789E-12	0.000E+00	7.087E-27	1.904E-25	6.937E-24	1.787E-22	5.618E-21	9.604E-20	8.302E-19
Ra-226	ΣS(j):		1.998E-04	1.993E-04	1.983E-04	1.951E-04	1.861E-04	1.584E-04	1.036E-04	4.086E-05
Ra-226	Ra-226	3.795E-12	3.795E-12	3.785E-12	3.764E-12	3.690E-12	3.489E-12	2.867E-12	1.635E-12	2.292E-13
Ra-226	Ra-226	4.196E-08	4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	ΣS(j):		4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	Ra-226	5.538E-14	5.538E-14	5.523E-14	5.492E-14	5.385E-14	5.091E-14	4.183E-14	2.386E-14	3.345E-15
Ra-226	Ra-226	7.972E-16	7.972E-16	7.950E-16	7.905E-16	7.751E-16	7.328E-16	6.021E-16	3.434E-16	4.814E-17
Ra-226	ΣS(j):		5.618E-14	5.602E-14	5.571E-14	5.463E-14	5.164E-14	4.243E-14	2.420E-14	3.393E-15
Ra-226	Ra-226	2.000E-07	2.000E-07	1.994E-07	1.983E-07	1.945E-07	1.838E-07	1.511E-07	8.616E-08	1.208E-08
Ra-226	Ra-226	2.640E-13	2.640E-13	2.633E-13	2.618E-13	2.567E-13	2.427E-13	1.994E-13	1.137E-13	1.594E-14
Ra-226	Th-230	2.000E-07	0.000E+00	8.652E-11	2.588E-10	8.543E-10	2.492E-09	7.550E-09	1.753E-08	2.876E-08
Ra-226	Th-230	2.640E-13	0.000E+00	1.142E-16	3.417E-16	1.128E-15	3.290E-15	9.966E-15	2.314E-14	3.796E-14
Ra-226	Th-230	3.800E-15	0.000E+00	1.644E-18	4.918E-18	1.623E-17	4.736E-17	1.434E-16	3.331E-16	5.464E-16
Ra-226	U-234	2.000E-07	0.000E+00	3.975E-16	3.563E-15	3.903E-14	3.372E-13	3.255E-12	1.988E-11	6.853E-11
Ra-226	U-234	2.640E-13	0.000E+00	5.248E-22	4.704E-21	5.152E-20	4.452E-19	4.296E-18	2.625E-17	9.046E-17
Ra-226	U-234	3.800E-15	0.000E+00	7.553E-24	6.770E-23	7.416E-22	6.408E-21	6.184E-20	3.778E-19	1.302E-18
Ra-226	U-238	3.200E-10	0.000E+00	5.984E-25	1.608E-23	5.858E-22	1.509E-20	4.744E-19	8.110E-18	7.011E-17
Ra-226	U-238	4.224E-16	0.000E+00	7.899E-31	2.123E-29	7.733E-28	1.992E-26	6.262E-25	1.071E-23	9.254E-23
Ra-226	U-238	6.080E-18	0.000E+00	1.137E-32	3.056E-31	1.113E-29	2.867E-28	9.014E-27	1.541E-25	1.332E-24
Ra-226	U-238	1.997E-07	0.000E+00	3.734E-22	1.003E-20	3.656E-19	9.416E-18	2.960E-16	5.061E-15	4.375E-14
Ra-226	U-238	2.636E-13	0.000E+00	4.929E-28	1.325E-26	4.826E-25	1.243E-23	3.908E-22	6.680E-21	5.775E-20
Ra-226	U-238	3.794E-15	0.000E+00	7.095E-30	1.907E-28	6.946E-27	1.789E-25	5.625E-24	9.615E-23	8.312E-22
Ra-226	ΣS(j):		2.000E-07	1.995E-07	1.986E-07	1.953E-07	1.863E-07	1.586E-07	1.037E-07	4.091E-08
Ra-226	Ra-226	3.800E-15	3.800E-15	3.789E-15	3.768E-15	3.695E-15	3.493E-15	2.870E-15	1.637E-15	2.295E-16
Th-230	Th-230	9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.984E-01	9.960E-01	9.877E-01
Th-230	Th-230	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.318E-06	1.315E-06	1.304E-06
Th-230	U-234	9.996E-01	0.000E+00	9.176E-06	2.744E-05	9.040E-05	2.624E-04	7.816E-04	1.742E-03	2.644E-03
Th-230	U-234	1.319E-06	0.000E+00	1.211E-11	3.622E-11	1.193E-10	3.464E-10	1.032E-09	2.299E-09	3.490E-09
Th-230	U-234	1.899E-08	0.000E+00	1.743E-13	5.213E-13	1.718E-12	4.986E-12	1.485E-11	3.310E-11	5.023E-11
Th-230	U-234	2.100E-04	0.000E+00	1.927E-09	5.763E-09	1.899E-08	5.512E-08	1.642E-07	3.659E-07	5.553E-07
Th-230	U-234	2.771E-10	0.000E+00	2.544E-15	7.607E-15	2.506E-14	7.275E-14	2.167E-13	4.830E-13	7.330E-13
Th-230	U-234	3.989E-12	0.000E+00	3.662E-17	1.095E-16	3.608E-16	1.047E-15	3.119E-15	6.952E-15	1.055E-14
Th-230	U-234	1.998E-04	0.000E+00	1.834E-09	5.483E-09	1.807E-08	5.244E-08	1.562E-07	3.481E-07	5.283E-07
Th-230	U-234	2.637E-10	0.000E+00	2.421E-15	7.238E-15	2.385E-14	6.922E-14	2.062E-13	4.595E-13	6.974E-13
Th-230	U-234	3.795E-12	0.000E+00	3.484E-17	1.042E-16	3.432E-16	9.963E-16	2.968E-15	6.614E-15	1.004E-14
Th-230	U-234	4.196E-08	0.000E+00	3.852E-13	1.152E-12	3.795E-12	1.101E-11	3.281E-11	7.312E-11	1.110E-10
Th-230	U-234	5.538E-14	0.000E+00	5.084E-19	1.520E-18	5.009E-18	1.454E-17	4.331E-17	9.651E-17	1.465E-16
Th-230	U-234	7.972E-16	0.000E+00	7.318E-21	2.188E-20	7.210E-20	2.093E-19	6.233E-19	1.389E-18	2.108E-18
Th-230	U-234	2.000E-07	0.000E+00	1.836E-12	5.490E-12	1.809E-11	5.250E-11	1.564E-10	3.485E-10	5.290E-10
Th-230	U-234	2.640E-13	0.000E+00	2.424E-18	7.246E-18	2.388E-17	6.930E-17	2.064E-16	4.601E-16	6.982E-16
Th-230	U-234	3.800E-15	0.000E+00	3.488E-20	1.043E-19	3.437E-19	9.975E-19	2.971E-18	6.622E-18	1.005E-17

Summary : Recreator (Outdoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	0.000E+00	2.072E-14	1.856E-13	2.031E-12	1.749E-11	1.668E-10	9.884E-10	3.158E-09
Th-230	U-238	2.111E-09	0.000E+00	2.734E-20	2.450E-19	2.680E-18	2.308E-17	2.202E-16	1.305E-15	4.168E-15
Th-230	U-238	3.039E-11	0.000E+00	3.936E-22	3.527E-21	3.858E-20	3.323E-19	3.170E-18	1.878E-17	5.999E-17
Th-230	U-238	3.359E-07	0.000E+00	4.351E-18	3.899E-17	4.265E-16	3.673E-15	3.504E-14	2.076E-13	6.632E-13
Th-230	U-238	4.434E-13	0.000E+00	5.743E-24	5.146E-23	5.630E-22	4.848E-21	4.626E-20	2.740E-19	8.754E-19
Th-230	U-238	6.383E-15	0.000E+00	8.267E-26	7.408E-25	8.104E-24	6.979E-23	6.658E-22	3.945E-21	1.260E-20
Th-230	U-238	3.196E-07	0.000E+00	4.140E-18	3.709E-17	4.058E-16	3.495E-15	3.334E-14	1.975E-13	6.310E-13
Th-230	U-238	4.219E-13	0.000E+00	5.464E-24	4.896E-23	5.357E-22	4.613E-21	4.401E-20	2.607E-19	8.329E-19
Th-230	U-238	6.073E-15	0.000E+00	7.866E-26	7.048E-25	7.710E-24	6.640E-23	6.335E-22	3.753E-21	1.199E-20
Th-230	U-238	6.713E-11	0.000E+00	8.695E-22	7.791E-21	8.524E-20	7.340E-19	7.003E-18	4.149E-17	1.325E-16
Th-230	U-238	8.862E-17	0.000E+00	1.148E-27	1.028E-26	1.125E-25	9.689E-25	9.244E-24	5.476E-23	1.749E-22
Th-230	U-238	1.276E-18	0.000E+00	1.652E-29	1.480E-28	1.620E-27	1.395E-26	1.331E-25	7.883E-25	2.518E-24
Th-230	U-238	3.200E-10	0.000E+00	4.145E-21	3.714E-20	4.063E-19	3.499E-18	3.338E-17	1.978E-16	6.318E-16
Th-230	U-238	4.224E-16	0.000E+00	5.471E-27	4.902E-26	5.363E-25	4.619E-24	4.406E-23	2.610E-22	8.339E-22
Th-230	U-238	6.080E-18	0.000E+00	7.875E-29	7.056E-28	7.720E-27	6.648E-26	6.342E-25	3.757E-24	1.200E-23
Th-230	U-238	9.980E-01	0.000E+00	1.293E-11	1.158E-10	1.267E-09	1.091E-08	1.041E-07	6.168E-07	1.970E-06
Th-230	U-238	1.317E-06	0.000E+00	1.706E-17	1.529E-16	1.673E-15	1.440E-14	1.374E-13	8.141E-13	2.601E-12
Th-230	U-238	1.896E-08	0.000E+00	2.456E-19	2.201E-18	2.408E-17	2.073E-16	1.978E-15	1.172E-14	3.744E-14
Th-230	U-238	2.096E-04	0.000E+00	2.715E-15	2.433E-14	2.662E-13	2.292E-12	2.187E-11	1.295E-10	4.138E-10
Th-230	U-238	2.767E-10	0.000E+00	3.584E-21	3.211E-20	3.513E-19	3.025E-18	2.886E-17	1.710E-16	5.463E-16
Th-230	U-238	3.983E-12	0.000E+00	5.159E-23	4.622E-22	5.057E-21	4.355E-20	4.155E-19	2.461E-18	7.863E-18
Th-230	U-238	1.994E-04	0.000E+00	2.583E-15	2.315E-14	2.532E-13	2.181E-12	2.080E-11	1.233E-10	3.937E-10
Th-230	U-238	2.633E-10	0.000E+00	3.410E-21	3.055E-20	3.343E-19	2.878E-18	2.746E-17	1.627E-16	5.197E-16
Th-230	U-238	3.789E-12	0.000E+00	4.908E-23	4.398E-22	4.811E-21	4.143E-20	3.953E-19	2.342E-18	7.481E-18
Th-230	U-238	4.189E-08	0.000E+00	5.426E-19	4.862E-18	5.319E-17	4.580E-16	4.370E-15	2.589E-14	8.270E-14
Th-230	U-238	5.530E-14	0.000E+00	7.162E-25	6.417E-24	7.021E-23	6.046E-22	5.768E-21	3.417E-20	1.092E-19
Th-230	U-238	7.959E-16	0.000E+00	1.031E-26	9.237E-26	1.011E-24	8.703E-24	8.303E-23	4.919E-22	1.571E-21
Th-230	U-238	1.997E-07	0.000E+00	2.586E-18	2.317E-17	2.535E-16	2.183E-15	2.083E-14	1.234E-13	3.942E-13
Th-230	U-238	2.636E-13	0.000E+00	3.414E-24	3.059E-23	3.347E-22	2.882E-21	2.749E-20	1.629E-19	5.204E-19
Th-230	U-238	3.794E-15	0.000E+00	4.914E-26	4.403E-25	4.817E-24	4.148E-23	3.958E-22	2.345E-21	7.490E-21
Th-230	ΣS(j):		9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.977E-01	9.903E-01
Th-230	Th-230	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.897E-08	1.892E-08	1.877E-08
Th-230	Th-230	2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Th-230	ΣS(j):		2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Ra-226	Th-230	2.100E-04	0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.926E-06	1.841E-05	3.019E-05
Ra-226	Th-230	3.989E-12	0.000E+00	1.726E-15	5.163E-15	1.704E-14	4.971E-14	1.506E-13	3.497E-13	5.736E-13
Ra-226	U-234	2.100E-04	0.000E+00	4.173E-13	3.741E-12	4.097E-11	3.540E-10	3.417E-09	2.087E-08	7.195E-08
Ra-226	U-234	2.771E-10	0.000E+00	5.509E-19	4.938E-18	5.408E-17	4.673E-16	4.510E-15	2.755E-14	9.497E-14
Ra-226	U-234	3.989E-12	0.000E+00	7.929E-21	7.107E-20	7.785E-19	6.727E-18	6.492E-17	3.966E-16	1.367E-15
Ra-226	U-238	3.359E-07	0.000E+00	6.282E-22	1.688E-20	6.150E-19	1.584E-17	4.980E-16	8.514E-15	7.360E-14
Ra-226	U-238	4.434E-13	0.000E+00	8.293E-28	2.228E-26	8.118E-25	2.091E-23	6.574E-22	1.124E-20	9.715E-20
Ra-226	U-238	6.383E-15	0.000E+00	1.194E-29	3.208E-28	1.169E-26	3.010E-25	9.463E-24	1.618E-22	1.398E-21
Ra-226	U-238	2.096E-04	0.000E+00	3.920E-19	1.053E-17	3.838E-16	9.885E-15	3.108E-13	5.313E-12	4.592E-11
Ra-226	U-238	2.767E-10	0.000E+00	5.175E-25	1.391E-23	5.066E-22	1.305E-20	4.102E-19	7.013E-18	6.062E-17
Ra-226	U-238	3.983E-12	0.000E+00	7.448E-27	2.002E-25	7.292E-24	1.878E-22	5.905E-21	1.009E-19	8.726E-19
Ra-226	ΣS(j):		0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.929E-06	1.843E-05	3.026E-05

Summary : Recreator (Outdoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.770E-10	2.768E-10	2.762E-10	2.738E-10
Th-230	Th-230	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.988E-12	3.984E-12	3.975E-12	3.942E-12
Th-230	ΣS(j):		2.811E-10	2.811E-10	2.811E-10	2.811E-10	2.810E-10	2.808E-10	2.801E-10	2.778E-10
Ra-226	Th-230	2.771E-10	0.000E+00	1.199E-13	3.587E-13	1.184E-12	3.454E-12	1.046E-11	2.430E-11	3.985E-11
Th-230	Th-230	1.998E-04	1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	2.637E-10	2.637E-10	2.637E-10	2.637E-10	2.636E-10	2.636E-10	2.634E-10	2.627E-10	2.605E-10
Th-230	ΣS(j):		1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.794E-12	3.791E-12	3.782E-12	3.750E-12
Th-230	Th-230	4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.194E-08	4.191E-08	4.181E-08	4.146E-08
Th-230	ΣS(j):		4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.191E-08	4.181E-08	4.146E-08
Ra-226	Th-230	4.196E-08	0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.229E-10	1.584E-09	3.678E-09	6.033E-09
Ra-226	Th-230	7.972E-16	0.000E+00	3.449E-19	1.032E-18	3.405E-18	9.935E-18	3.009E-17	6.989E-17	1.146E-16
Ra-226	U-234	4.196E-08	0.000E+00	8.340E-17	7.475E-16	8.188E-15	7.075E-14	6.828E-13	4.172E-12	1.438E-11
Ra-226	U-234	5.538E-14	0.000E+00	1.101E-22	9.868E-22	1.081E-20	9.339E-20	9.014E-19	5.506E-18	1.898E-17
Ra-226	U-234	7.972E-16	0.000E+00	1.585E-24	1.420E-23	1.556E-22	1.344E-21	1.297E-20	7.926E-20	2.732E-19
Ra-226	U-238	6.713E-11	0.000E+00	1.255E-25	3.374E-24	1.229E-22	3.166E-21	9.953E-20	1.701E-18	1.471E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.657E-31	4.453E-30	1.622E-28	4.179E-27	1.314E-25	2.246E-24	1.941E-23
Ra-226	U-238	1.276E-18	0.000E+00	2.385E-33	6.410E-32	2.335E-30	6.015E-29	1.891E-27	3.233E-26	2.794E-25
Ra-226	U-238	4.189E-08	0.000E+00	7.834E-23	2.105E-21	7.669E-20	1.975E-18	6.211E-17	1.062E-15	9.178E-15
Ra-226	U-238	5.530E-14	0.000E+00	1.034E-28	2.779E-27	1.012E-25	2.607E-24	8.198E-23	1.401E-21	1.211E-20
Ra-226	U-238	7.959E-16	0.000E+00	1.488E-30	4.000E-29	1.457E-27	3.753E-26	1.180E-24	2.017E-23	1.744E-22
Ra-226	ΣS(j):		0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.230E-10	1.585E-09	3.683E-09	6.048E-09
Th-230	Th-230	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.536E-14	5.532E-14	5.519E-14	5.473E-14
Th-230	Th-230	7.972E-16	7.972E-16	7.972E-16	7.972E-16	7.971E-16	7.969E-16	7.962E-16	7.943E-16	7.877E-16
Th-230	ΣS(j):		5.618E-14	5.618E-14	5.618E-14	5.618E-14	5.616E-14	5.611E-14	5.598E-14	5.551E-14
Ra-226	Th-230	5.538E-14	0.000E+00	2.396E-17	7.168E-17	2.366E-16	6.902E-16	2.091E-15	4.855E-15	7.964E-15
Th-230	Th-230	2.000E-07	2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.639E-13	2.637E-13	2.631E-13	2.609E-13
Th-230	ΣS(j):		2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.799E-15	3.795E-15	3.786E-15	3.755E-15
U-234	U-234	9.996E-01	9.996E-01	9.963E-01	9.897E-01	9.669E-01	9.048E-01	7.171E-01	3.690E-01	3.607E-02
U-234	U-234	1.319E-06	1.319E-06	1.315E-06	1.306E-06	1.276E-06	1.194E-06	9.465E-07	4.871E-07	4.761E-08
U-234	U-238	1.599E-03	0.000E+00	4.501E-09	1.341E-08	4.368E-08	1.226E-07	3.240E-07	5.003E-07	1.632E-07
U-234	U-238	2.111E-09	0.000E+00	5.941E-15	1.770E-14	5.766E-14	1.619E-13	4.276E-13	6.604E-13	2.154E-13
U-234	U-238	3.039E-11	0.000E+00	8.551E-17	2.548E-16	8.299E-16	2.330E-15	6.155E-15	9.505E-15	3.100E-15
U-234	U-238	3.359E-07	0.000E+00	9.453E-13	2.817E-12	9.175E-12	2.576E-11	6.805E-11	1.051E-10	3.427E-11
U-234	U-238	4.434E-13	0.000E+00	1.248E-18	3.719E-18	1.211E-17	3.400E-17	8.982E-17	1.387E-16	4.524E-17
U-234	U-238	6.383E-15	0.000E+00	1.796E-20	5.353E-20	1.743E-19	4.894E-19	1.293E-18	1.997E-18	6.512E-19
U-234	U-238	3.196E-07	0.000E+00	8.994E-13	2.680E-12	8.729E-12	2.451E-11	6.474E-11	9.997E-11	3.261E-11
U-234	U-238	4.219E-13	0.000E+00	1.187E-18	3.538E-18	1.152E-17	3.235E-17	8.546E-17	1.320E-16	4.304E-17

Summary : Recreator (Outdoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	0.000E+00	1.709E-20	5.093E-20	1.659E-19	4.656E-19	1.230E-18	1.900E-18	6.195E-19
U-234	U-238	6.713E-11	0.000E+00	1.889E-16	5.630E-16	1.834E-15	5.147E-15	1.360E-14	2.100E-14	6.849E-15
U-234	U-238	8.862E-17	0.000E+00	2.494E-22	7.432E-22	2.420E-21	6.794E-21	1.795E-20	2.772E-20	9.040E-21
U-234	U-238	1.276E-18	0.000E+00	3.589E-24	1.070E-23	3.484E-23	9.780E-23	2.584E-22	3.990E-22	1.301E-22
U-234	U-238	3.200E-10	0.000E+00	9.005E-16	2.684E-15	8.740E-15	2.453E-14	6.482E-14	1.001E-13	3.265E-14
U-234	U-238	4.224E-16	0.000E+00	1.189E-21	3.542E-21	1.154E-20	3.239E-20	8.556E-20	1.321E-19	4.309E-20
U-234	U-238	6.080E-18	0.000E+00	1.711E-23	5.099E-23	1.661E-22	4.662E-22	1.232E-21	1.902E-21	6.203E-22
U-234	U-238	9.980E-01	0.000E+00	2.808E-06	8.369E-06	2.726E-05	7.652E-05	2.022E-04	3.122E-04	1.018E-04
U-234	U-238	1.317E-06	0.000E+00	3.707E-12	1.105E-11	3.598E-11	1.010E-10	2.668E-10	4.121E-10	1.344E-10
U-234	U-238	1.896E-08	0.000E+00	5.336E-14	1.590E-13	5.179E-13	1.454E-12	3.841E-12	5.931E-12	1.934E-12
U-234	U-238	2.096E-04	0.000E+00	5.899E-10	1.758E-09	5.725E-09	1.607E-08	4.246E-08	6.557E-08	2.139E-08
U-234	U-238	2.767E-10	0.000E+00	7.787E-16	2.320E-15	7.557E-15	2.122E-14	5.605E-14	8.655E-14	2.823E-14
U-234	U-238	3.983E-12	0.000E+00	1.121E-17	3.340E-17	1.088E-16	3.054E-16	8.068E-16	1.246E-15	4.063E-16
U-234	U-238	1.994E-04	0.000E+00	5.612E-10	1.673E-09	5.447E-09	1.529E-08	4.040E-08	6.238E-08	2.035E-08
U-234	U-238	2.633E-10	0.000E+00	7.408E-16	2.208E-15	7.190E-15	2.018E-14	5.333E-14	8.235E-14	2.686E-14
U-234	U-238	3.789E-12	0.000E+00	1.066E-17	3.178E-17	1.035E-16	2.905E-16	7.676E-16	1.185E-15	3.866E-16
U-234	U-238	4.189E-08	0.000E+00	1.179E-13	3.513E-13	1.144E-12	3.212E-12	8.486E-12	1.310E-11	4.274E-12
U-234	U-238	5.530E-14	0.000E+00	1.556E-19	4.637E-19	1.510E-18	4.240E-18	1.120E-17	1.730E-17	5.641E-18
U-234	U-238	7.959E-16	0.000E+00	2.240E-21	6.675E-21	2.174E-20	6.102E-20	1.612E-19	2.490E-19	8.120E-20
U-234	U-238	1.997E-07	0.000E+00	5.619E-13	1.675E-12	5.454E-12	1.531E-11	4.045E-11	6.246E-11	2.037E-11
U-234	U-238	2.636E-13	0.000E+00	7.417E-19	2.210E-18	7.199E-18	2.021E-17	5.339E-17	8.245E-17	2.689E-17
U-234	U-238	3.794E-15	0.000E+00	1.068E-20	3.182E-20	1.036E-19	2.909E-19	7.685E-19	1.187E-18	3.871E-19
U-234	ΣS(j):		9.996E-01	9.963E-01	9.897E-01	9.670E-01	9.049E-01	7.173E-01	3.693E-01	3.617E-02
U-234	U-234	1.899E-08	1.899E-08	1.893E-08	1.880E-08	1.837E-08	1.719E-08	1.362E-08	7.011E-09	6.853E-10
U-234	U-234	2.100E-04	2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.900E-04	1.506E-04	7.750E-05	7.576E-06
U-234	ΣS(j):		2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.901E-04	1.506E-04	7.751E-05	7.576E-06
U-234	U-234	2.771E-10	2.771E-10	2.762E-10	2.744E-10	2.681E-10	2.509E-10	1.988E-10	1.023E-10	1.000E-11
U-234	U-234	3.989E-12	3.989E-12	3.976E-12	3.950E-12	3.859E-12	3.611E-12	2.862E-12	1.473E-12	1.439E-13
U-234	ΣS(j):		2.811E-10	2.802E-10	2.783E-10	2.719E-10	2.545E-10	2.017E-10	1.038E-10	1.014E-11
U-234	U-234	1.998E-04	1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	2.637E-10	2.637E-10	2.628E-10	2.611E-10	2.551E-10	2.387E-10	1.892E-10	9.733E-11	9.514E-12
U-234	ΣS(j):		1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	3.795E-12	3.795E-12	3.783E-12	3.758E-12	3.671E-12	3.435E-12	2.723E-12	1.401E-12	1.369E-13
U-234	U-234	4.196E-08	4.196E-08	4.182E-08	4.154E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	ΣS(j):		4.196E-08	4.182E-08	4.155E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	U-234	5.538E-14	5.538E-14	5.520E-14	5.484E-14	5.357E-14	5.013E-14	3.973E-14	2.044E-14	1.998E-15
U-234	U-234	7.972E-16	7.972E-16	7.946E-16	7.893E-16	7.712E-16	7.216E-16	5.719E-16	2.943E-16	2.876E-17
U-234	ΣS(j):		5.618E-14	5.600E-14	5.562E-14	5.435E-14	5.085E-14	4.030E-14	2.074E-14	2.027E-15
U-234	U-234	2.000E-07	2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	2.640E-13	2.640E-13	2.631E-13	2.614E-13	2.554E-13	2.390E-13	1.894E-13	9.745E-14	9.526E-15
U-234	ΣS(j):		2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	3.800E-15	3.800E-15	3.787E-15	3.762E-15	3.676E-15	3.440E-15	2.726E-15	1.403E-15	1.371E-16

Summary : Recreator (Outdoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	5.450E-07	5.432E-07	5.396E-07	5.272E-07	4.933E-07	3.911E-07	2.014E-07	1.972E-08
U-238	U-238	1.599E-03	1.599E-03	1.594E-03	1.583E-03	1.547E-03	1.448E-03	1.148E-03	5.909E-04	5.787E-05
U-238	ΣS(j):		1.600E-03	1.595E-03	1.584E-03	1.548E-03	1.448E-03	1.148E-03	5.911E-04	5.789E-05
U-238	U-238	2.111E-09	2.111E-09	2.104E-09	2.090E-09	2.042E-09	1.911E-09	1.515E-09	7.800E-10	7.639E-11
U-238	U-238	3.039E-11	3.039E-11	3.029E-11	3.009E-11	2.940E-11	2.751E-11	2.180E-11	1.123E-11	1.100E-12
U-238	ΣS(j):		2.142E-09	2.134E-09	2.120E-09	2.072E-09	1.939E-09	1.537E-09	7.912E-10	7.749E-11
U-238	U-238	3.359E-07	3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	4.434E-13	4.434E-13	4.420E-13	4.390E-13	4.290E-13	4.014E-13	3.182E-13	1.638E-13	1.605E-14
U-238	ΣS(j):		3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	6.383E-15	6.383E-15	6.362E-15	6.319E-15	6.174E-15	5.778E-15	4.580E-15	2.358E-15	2.310E-16
U-238	U-238	3.196E-07	3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	ΣS(j):		3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	U-238	4.219E-13	4.219E-13	4.205E-13	4.177E-13	4.081E-13	3.819E-13	3.027E-13	1.559E-13	1.527E-14
U-238	U-238	6.073E-15	6.073E-15	6.053E-15	6.012E-15	5.874E-15	5.497E-15	4.357E-15	2.244E-15	2.197E-16
U-238	ΣS(j):		4.280E-13	4.265E-13	4.237E-13	4.140E-13	3.874E-13	3.071E-13	1.581E-13	1.549E-14
U-238	U-238	6.713E-11	6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	8.862E-17	8.862E-17	8.832E-17	8.774E-17	8.572E-17	8.022E-17	6.359E-17	3.274E-17	3.206E-18
U-238	ΣS(j):		6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	1.276E-18	1.276E-18	1.271E-18	1.263E-18	1.234E-18	1.155E-18	9.153E-19	4.712E-19	4.615E-20
U-238	U-238	3.200E-10	3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	ΣS(j):		3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	U-238	4.224E-16	4.224E-16	4.210E-16	4.182E-16	4.086E-16	3.824E-16	3.031E-16	1.561E-16	1.528E-17
U-238	U-238	6.080E-18	6.080E-18	6.060E-18	6.020E-18	5.882E-18	5.504E-18	4.363E-18	2.246E-18	2.200E-19
U-238	ΣS(j):		4.285E-16	4.271E-16	4.242E-16	4.145E-16	3.879E-16	3.075E-16	1.583E-16	1.550E-17
U-238	U-238	9.980E-01	9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.317E-06	1.317E-06	1.313E-06	1.304E-06	1.274E-06	1.192E-06	9.453E-07	4.867E-07	4.767E-08
U-238	ΣS(j):		9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.896E-08	1.896E-08	1.890E-08	1.877E-08	1.834E-08	1.716E-08	1.361E-08	7.005E-09	6.861E-10
U-238	U-238	2.096E-04	2.096E-04	2.089E-04	2.075E-04	2.028E-04	1.898E-04	1.504E-04	7.744E-05	7.585E-06
U-238	ΣS(j):		2.096E-04	2.089E-04	2.076E-04	2.028E-04	1.898E-04	1.504E-04	7.745E-05	7.586E-06
U-238	U-238	2.767E-10	2.767E-10	2.758E-10	2.740E-10	2.677E-10	2.505E-10	1.985E-10	1.022E-10	1.001E-11
U-238	U-238	3.983E-12	3.983E-12	3.970E-12	3.943E-12	3.853E-12	3.605E-12	2.858E-12	1.471E-12	1.441E-13
U-238	ΣS(j):		2.807E-10	2.798E-10	2.779E-10	2.715E-10	2.541E-10	2.014E-10	1.037E-10	1.016E-11
U-238	U-238	1.994E-04	1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	2.633E-10	2.633E-10	2.624E-10	2.607E-10	2.547E-10	2.383E-10	1.889E-10	9.726E-11	9.526E-12
U-238	ΣS(j):		1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	3.789E-12	3.789E-12	3.777E-12	3.752E-12	3.666E-12	3.430E-12	2.719E-12	1.400E-12	1.371E-13

Summary : Recreator (Outdoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	4.189E-08	4.175E-08	4.148E-08	4.052E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	ΣS(j):		4.189E-08	4.176E-08	4.148E-08	4.053E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	U-238	5.530E-14	5.530E-14	5.511E-14	5.475E-14	5.349E-14	5.006E-14	3.968E-14	2.043E-14	2.001E-15
U-238	U-238	7.959E-16	7.959E-16	7.933E-16	7.880E-16	7.699E-16	7.205E-16	5.711E-16	2.941E-16	2.880E-17
U-238	ΣS(j):		5.609E-14	5.591E-14	5.554E-14	5.426E-14	5.078E-14	4.025E-14	2.072E-14	2.030E-15
U-238	U-238	1.997E-07	1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	2.636E-13	2.636E-13	2.627E-13	2.610E-13	2.550E-13	2.386E-13	1.891E-13	9.738E-14	9.537E-15
U-238	ΣS(j):		1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	3.794E-15	3.794E-15	3.781E-15	3.756E-15	3.670E-15	3.434E-15	2.722E-15	1.402E-15	1.373E-16

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 232.87 seconds

Total water/soil iteration failures = 3.380E+02.

RESidual RADioactivity (ResRad) Dose-Modeling Output
Indoor Worker

Summary : Recreator (Indoor Worker)

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Time = 1.000E+00	14
Time = 3.000E+00	15
Time = 1.000E+01	16
Time = 3.000E+01	17
Time = 1.000E+02	18
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Summary : Recreator (Indoor Worker)

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1 (1)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1 (2)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1 (3)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1 (4)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1 (5)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1 (6)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1 (7)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1 (8)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1 (9)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1 (10)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1 (11)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1 (12)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1 (13)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1 (14)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1 (15)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1 (16)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1 (17)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1 (18)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1 (19)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1 (20)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.129E-02	2.077E-02	DCF2 (1)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2 (2)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2 (3)
B-1	Po-210	1.580E-02	1.582E-02	DCF2 (4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2 (5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2 (8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2 (11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2 (14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2 (17)
B-1	Th-230	3.760E-01	3.759E-01	DCF2 (20)
B-1	U-234	3.480E-02	3.479E-02	DCF2 (35)
B-1	U-238	2.970E-02	2.973E-02	DCF2 (50)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2 (51)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2 (66)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	2.585E-03	2.575E-03	DCF3 (1)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3 (2)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3 (3)
D-1	Po-210	4.480E-03	4.477E-03	DCF3 (4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3 (8)
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3 (11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3 (14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3 (17)
D-1	Th-230	7.920E-04	7.918E-04	DCF3 (20)
D-1	U-234	1.830E-04	1.831E-04	DCF3 (35)

Summary : Recreator (Indoor Worker)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	U-238	1.650E-04	1.650E-04	DCF3(50)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(51)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(66)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(35,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(35,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(35,3)
D-34				

Summary : Recreator (Indoor Worker)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(50,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(50,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(50,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(66,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(66,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(66,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(35,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(35,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(50,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(50,2)
D-5				

Summary : Recreator (Indoor Worker)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5				
D-5	U-238+D1 , fish	1.000E+01	1.000E+01	BIOFAC(66,1)
D-5	U-238+D1 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(66,2)
D-5				

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Recreator (Indoor Worker)

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.200E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(35)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(50)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(35)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(50)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ

Summary : Recreator (Indoor Worker)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsat. zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.632E-02	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC (5)
R016	Unsat. zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC (20)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)

Summary : Recreator (Indoor Worker)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (35)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (35,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (35)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (35)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (35)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (50)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (50,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (50)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH (50)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (50)
R017	Inhalation rate (m**3/yr)	1.500E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	2.300E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	0.000E+00	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)

Summary : Recreator (Indoor Worker)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.300E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Summary : Recreator (Indoor Worker)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVS
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary : Recreator (Indoor Worker)

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Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Pb-210	1.000E+00
Thickness:	2.00 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	1.000E+00
		Th-230	1.000E+00
		U-234	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	9.653E-01	9.630E-01	9.585E-01	9.430E-01	9.000E-01	7.671E-01	5.040E-01	2.040E-01
M(t):	8.045E-02	8.025E-02	7.988E-02	7.858E-02	7.500E-02	6.392E-02	4.200E-02	1.700E-02

Maximum TDOSE(t): 9.653E-01 mrem/yr at t = 0.000E+00 years

Summary : Recreator (Indoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	6.639E-04	0.0007	7.361E-04	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.473E-02	0.0153
Po-210	2.242E-06	0.0000	1.807E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.111E-03	0.0063
Ra-226	9.097E-01	0.9424	8.949E-04	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.312E-03	0.0034
Th-230	2.957E-04	0.0003	9.428E-03	0.0098	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.369E-03	0.0025
U-234	3.170E-05	0.0000	8.712E-04	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.463E-04	0.0006
U-238	1.417E-02	0.0147	7.442E-04	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.299E-04	0.0005
Total	9.249E-01	0.9581	1.286E-02	0.0133	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.760E-02	0.0286

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.613E-02	0.0167
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.294E-03	0.0065
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.139E-01	0.9467
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.209E-02	0.0125
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.449E-03	0.0015
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.544E-02	0.0160
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.653E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Indoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	6.443E-04	0.0007	8.600E-04	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.925E-02	0.0200
Po-210	3.540E-07	0.0000	2.854E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.650E-04	0.0010
Ra-226	9.072E-01	0.9420	9.180E-04	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.856E-03	0.0040
Th-230	6.892E-04	0.0007	9.429E-03	0.0098	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.370E-03	0.0025
U-234	3.160E-05	0.0000	8.684E-04	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.445E-04	0.0006
U-238	1.412E-02	0.0147	7.418E-04	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.281E-04	0.0005
Total	9.227E-01	0.9581	1.285E-02	0.0133	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.751E-02	0.0286

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.076E-02	0.0216
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.939E-04	0.0010
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.120E-01	0.9470
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.249E-02	0.0130
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.444E-03	0.0015
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.539E-02	0.0160
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.630E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Indoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	6.036E-04	0.0006	8.315E-04	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.891E-02	0.0197
Po-210	8.825E-09	0.0000	7.115E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.406E-05	0.0000
Ra-226	9.022E-01	0.9412	9.660E-04	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.037E-03	0.0053
Th-230	1.473E-03	0.0015	9.429E-03	0.0098	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.374E-03	0.0025
U-234	3.141E-05	0.0000	8.628E-04	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.409E-04	0.0006
U-238	1.403E-02	0.0146	7.368E-04	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.246E-04	0.0005
Total	9.183E-01	0.9580	1.283E-02	0.0134	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.741E-02	0.0286

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.035E-02	0.0212
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.478E-05	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.082E-01	0.9475
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.328E-02	0.0139
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.435E-03	0.0015
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.529E-02	0.0159
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.585E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Indoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	4.795E-04	0.0005	6.611E-04	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.504E-02	0.0160
Po-210	2.158E-14	0.0000	1.740E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.882E-11	0.0000
Ra-226	8.847E-01	0.9382	1.108E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.598E-03	0.0091
Th-230	4.182E-03	0.0044	9.432E-03	0.0100	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.395E-03	0.0025
U-234	3.087E-05	0.0000	8.436E-04	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.286E-04	0.0006
U-238	1.370E-02	0.0145	7.199E-04	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.126E-04	0.0005
Total	9.031E-01	0.9577	1.276E-02	0.0135	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.708E-02	0.0287

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.618E-02	0.0172
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.058E-11	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.944E-01	0.9485
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-02	0.0170
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.403E-03	0.0015
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.494E-02	0.0158
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.430E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Indoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.484E-04	0.0003	3.425E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.793E-03	0.0087
Po-210	1.998E-30	0.0000	1.611E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.447E-27	0.0000
Ra-226	8.366E-01	0.9296	1.341E-03	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.480E-02	0.0164
Th-230	1.164E-02	0.0129	9.440E-03	0.0105	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.499E-03	0.0028
U-234	3.031E-05	0.0000	7.911E-04	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.951E-04	0.0006
U-238	1.282E-02	0.0142	6.737E-04	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.797E-04	0.0005
Total	8.614E-01	0.9570	1.259E-02	0.0140	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.607E-02	0.0290

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.384E-03	0.0093
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.610E-27	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.528E-01	0.9475
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.357E-02	0.0262
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.316E-03	0.0015
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.398E-02	0.0155
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.000E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Indoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	2.485E-05	0.0000	3.427E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.797E-04	0.0010
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	6.876E-01	0.8964	1.358E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.800E-02	0.0235
Th-230	3.465E-02	0.0452	9.475E-03	0.0124	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.031E-03	0.0040
U-234	3.778E-05	0.0000	6.324E-04	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.940E-04	0.0005
U-238	1.016E-02	0.0133	5.342E-04	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.803E-04	0.0005
Total	7.325E-01	0.9549	1.203E-02	0.0157	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.258E-02	0.0294

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.388E-04	0.0011
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.069E-01	0.9216
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.716E-02	0.0615
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.064E-03	0.0014
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-02	0.0144
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.671E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Indoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	3.459E-08	0.0000	4.769E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.922E-01	0.7782	7.949E-04	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.073E-02	0.0213
Th-230	8.010E-02	0.1589	9.544E-03	0.0189	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.259E-03	0.0084
U-234	1.027E-04	0.0002	3.382E-04	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.078E-04	0.0004
U-238	5.233E-03	0.0104	2.752E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.959E-04	0.0004
Total	4.777E-01	0.9477	1.095E-02	0.0217	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.539E-02	0.0305

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.167E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.037E-01	0.8011
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.390E-02	0.1863
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.487E-04	0.0013
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.705E-03	0.0113
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.040E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Indoor Worker)

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	3.479E-18	0.0000	4.796E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.091E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.498E-02	0.2696	1.114E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.504E-03	0.0074
Th-230	1.312E-01	0.6432	9.569E-03	0.0469	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.639E-03	0.0276
U-234	3.139E-04	0.0015	5.697E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.376E-05	0.0002
U-238	5.128E-04	0.0025	2.704E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.924E-05	0.0001
Total	1.870E-01	0.9168	9.765E-03	0.0479	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.196E-03	0.0353

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.174E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.659E-02	0.2775
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.464E-01	0.7178
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.046E-04	0.0020
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.590E-04	0.0027
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.040E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Recreator (Indoor Worker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Pb-210+D	Pb-210+D	1.000E+00	8.790E-03	8.505E-03	7.964E-03	6.326E-03	3.277E-03	3.279E-04	4.564E-07	4.590E-17	
Pb-210+D	Po-210	1.000E+00	7.344E-03	1.225E-02	1.238E-02	9.858E-03	5.107E-03	5.109E-04	7.111E-07	7.152E-17	
Pb-210+D	ΣDSR(j)		1.613E-02	2.075E-02	2.035E-02	1.618E-02	8.384E-03	8.388E-04	1.167E-06	1.174E-16	
Pb-210+D1	Pb-210+D1	1.320E-06	1.305E-08	1.262E-08	1.182E-08	9.390E-09	4.864E-09	4.867E-10	6.774E-13	6.812E-23	
Pb-210+D2	Pb-210+D2	1.900E-08	1.187E-09	1.149E-09	1.076E-09	8.544E-10	4.426E-10	4.429E-11	6.163E-14	6.199E-24	
Po-210	Po-210	1.000E+00	6.294E-03	9.939E-04	2.478E-05	6.058E-11	5.610E-27	0.000E+00	0.000E+00	0.000E+00	
Ra-226+D	Ra-226+D	9.996E-01	9.131E-01	9.105E-01	9.054E-01	8.878E-01	8.393E-01	6.896E-01	3.934E-01	5.514E-02	
Ra-226+D	Pb-210+D	9.996E-01	1.378E-04	4.069E-04	9.170E-04	2.437E-03	5.110E-03	6.652E-03	3.988E-03	5.591E-04	
Ra-226+D	Po-210	9.996E-01	8.683E-05	4.162E-04	1.196E-03	3.569E-03	7.746E-03	1.019E-02	6.113E-03	8.570E-04	
Ra-226+D	ΣDSR(j)		9.133E-01	9.113E-01	9.075E-01	8.938E-01	8.522E-01	7.064E-01	4.035E-01	5.655E-02	
Ra-226+D	Ra-226+D	1.319E-06	1.205E-06	1.202E-06	1.195E-06	1.172E-06	1.108E-06	9.103E-07	5.192E-07	7.278E-08	
Ra-226+D	Pb-210+D1	1.319E-06	2.045E-10	6.039E-10	1.361E-09	3.618E-09	7.584E-09	9.873E-09	5.919E-09	8.298E-10	
Ra-226+D	ΣDSR(j)		1.205E-06	1.202E-06	1.196E-06	1.175E-06	1.115E-06	9.201E-07	5.252E-07	7.361E-08	
Ra-226+D	Ra-226+D	1.899E-08	1.735E-08	1.730E-08	1.720E-08	1.687E-08	1.595E-08	1.310E-08	7.474E-09	1.048E-09	
Ra-226+D	Pb-210+D2	1.899E-08	1.861E-11	5.495E-11	1.238E-10	3.292E-10	6.901E-10	8.984E-10	5.386E-10	7.551E-11	
Ra-226+D	ΣDSR(j)		1.737E-08	1.735E-08	1.733E-08	1.720E-08	1.664E-08	1.400E-08	8.012E-09	1.123E-09	
Ra-226+D1	Ra-226+D1	2.100E-04	4.981E-04	4.967E-04	4.939E-04	4.843E-04	4.578E-04	3.762E-04	2.146E-04	3.008E-05	
Ra-226+D1	Pb-210+D	2.100E-04	2.894E-08	8.546E-08	1.926E-07	5.120E-07	1.073E-06	1.397E-06	8.376E-07	1.174E-07	
Ra-226+D1	Po-210	2.100E-04	1.824E-08	8.742E-08	2.512E-07	7.497E-07	1.627E-06	2.140E-06	1.284E-06	1.800E-07	
Ra-226+D1	ΣDSR(j)		4.981E-04	4.968E-04	4.943E-04	4.855E-04	4.605E-04	3.797E-04	2.167E-04	3.037E-05	
Ra-226+D1	Ra-226+D1	2.771E-10	6.574E-10	6.556E-10	6.519E-10	6.392E-10	6.043E-10	4.965E-10	2.832E-10	3.970E-11	
Ra-226+D1	Pb-210+D1	2.771E-10	4.296E-14	1.268E-13	2.859E-13	7.599E-13	1.593E-12	2.074E-12	1.243E-12	1.743E-13	
Ra-226+D1	ΣDSR(j)		6.575E-10	6.557E-10	6.522E-10	6.400E-10	6.059E-10	4.986E-10	2.845E-10	3.988E-11	
Ra-226+D1	Ra-226+D1	3.989E-12	9.463E-12	9.437E-12	9.384E-12	9.201E-12	8.699E-12	7.147E-12	4.077E-12	5.715E-13	
Ra-226+D1	Pb-210+D2	3.989E-12	3.909E-15	1.154E-14	2.601E-14	6.915E-14	1.450E-13	1.887E-13	1.131E-13	1.586E-14	
Ra-226+D1	ΣDSR(j)		9.467E-12	9.448E-12	9.410E-12	9.270E-12	8.844E-12	7.336E-12	4.190E-12	5.873E-13	
Ra-226+D2	Ra-226+D2	1.998E-04	1.604E-04	1.599E-04	1.590E-04	1.559E-04	1.474E-04	1.211E-04	6.909E-05	9.685E-06	
Ra-226+D2	Pb-210+D	1.998E-04	2.753E-08	8.131E-08	1.832E-07	4.871E-07	1.021E-06	1.329E-06	7.969E-07	1.117E-07	
Ra-226+D2	Po-210	1.998E-04	1.735E-08	8.318E-08	2.390E-07	7.133E-07	1.548E-06	2.036E-06	1.222E-06	1.713E-07	
Ra-226+D2	ΣDSR(j)		1.604E-04	1.601E-04	1.595E-04	1.571E-04	1.500E-04	1.245E-04	7.111E-05	9.968E-06	
Ra-226+D2	Ra-226+D2	2.637E-10	2.117E-10	2.111E-10	2.099E-10	2.058E-10	1.946E-10	1.599E-10	9.120E-11	1.278E-11	
Ra-226+D2	Pb-210+D1	2.637E-10	4.087E-14	1.207E-13	2.720E-13	7.230E-13	1.516E-12	1.973E-12	1.183E-12	1.658E-13	
Ra-226+D2	ΣDSR(j)		2.117E-10	2.112E-10	2.102E-10	2.066E-10	1.961E-10	1.619E-10	9.239E-11	1.295E-11	

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D2	Ra-226+D2	3.795E-12	3.047E-12	3.039E-12	3.022E-12	2.963E-12	2.801E-12	2.301E-12	1.313E-12	1.840E-13	
Ra-226+D2	Pb-210+D2	3.795E-12	3.719E-15	1.098E-14	2.475E-14	6.579E-14	1.379E-13	1.795E-13	1.076E-13	1.509E-14	
Ra-226+D2	ΣDSR(j)		3.051E-12	3.050E-12	3.046E-12	3.029E-12	2.939E-12	2.481E-12	1.420E-12	1.991E-13	
Ra-226+D3	Ra-226+D3	4.196E-08	9.489E-08	9.463E-08	9.410E-08	9.227E-08	8.723E-08	7.167E-08	4.088E-08	5.730E-09	
Ra-226+D3	Pb-210+D	4.196E-08	5.783E-12	1.708E-11	3.849E-11	1.023E-10	2.145E-10	2.792E-10	1.674E-10	2.347E-11	
Ra-226+D3	Po-210	4.196E-08	3.645E-12	1.747E-11	5.019E-11	1.498E-10	3.251E-10	4.276E-10	2.566E-10	3.597E-11	
Ra-226+D3	ΣDSR(j)		9.490E-08	9.466E-08	9.419E-08	9.252E-08	8.777E-08	7.238E-08	4.131E-08	5.790E-09	
Ra-226+D3	Ra-226+D3	5.538E-14	1.253E-13	1.249E-13	1.242E-13	1.218E-13	1.151E-13	9.460E-14	5.396E-14	7.564E-15	
Ra-226+D3	Pb-210+D1	5.538E-14	8.584E-18	2.535E-17	5.713E-17	1.519E-16	3.183E-16	4.144E-16	2.485E-16	3.483E-17	
Ra-226+D3	ΣDSR(j)		1.253E-13	1.249E-13	1.243E-13	1.219E-13	1.155E-13	9.502E-14	5.421E-14	7.599E-15	
Ra-226+D3	Ra-226+D3	7.972E-16	1.803E-15	1.798E-15	1.788E-15	1.753E-15	1.657E-15	1.362E-15	7.767E-16	1.089E-16	
Ra-226+D3	Pb-210+D2	7.972E-16	7.811E-19	2.307E-18	5.198E-18	1.382E-17	2.897E-17	3.771E-17	2.261E-17	3.170E-18	
Ra-226+D3	ΣDSR(j)		1.804E-15	1.800E-15	1.793E-15	1.767E-15	1.686E-15	1.399E-15	7.994E-16	1.120E-16	
Ra-226+D4	Ra-226+D4	2.000E-07	1.477E-09	1.473E-09	1.465E-09	1.436E-09	1.358E-09	1.116E-09	6.365E-10	8.922E-11	
Ra-226+D4	Pb-210+D	2.000E-07	2.757E-11	8.141E-11	1.835E-10	4.877E-10	1.022E-09	1.331E-09	7.979E-10	1.119E-10	
Ra-226+D4	Po-210	2.000E-07	1.737E-11	8.328E-11	2.393E-10	7.141E-10	1.550E-09	2.038E-09	1.223E-09	1.715E-10	
Ra-226+D4	ΣDSR(j)		1.522E-09	1.638E-09	1.888E-09	2.638E-09	3.930E-09	4.485E-09	2.657E-09	3.725E-10	
Ra-226+D4	Ra-226+D4	2.640E-13	1.950E-15	1.945E-15	1.934E-15	1.896E-15	1.793E-15	1.473E-15	8.401E-16	1.178E-16	
Ra-226+D4	Pb-210+D1	2.640E-13	4.092E-17	1.208E-16	2.723E-16	7.239E-16	1.517E-15	1.975E-15	1.184E-15	1.660E-16	
Ra-226+D4	ΣDSR(j)		1.991E-15	2.065E-15	2.206E-15	2.620E-15	3.310E-15	3.448E-15	2.024E-15	2.838E-16	
Ra-226+D4	Ra-226+D4	3.800E-15	2.807E-17	2.799E-17	2.783E-17	2.729E-17	2.580E-17	2.120E-17	1.209E-17	1.695E-18	
Ra-226+D4	Pb-210+D2	3.800E-15	3.723E-18	1.099E-17	2.478E-17	6.587E-17	1.381E-16	1.797E-16	1.078E-16	1.511E-17	
Ra-226+D4	ΣDSR(j)		3.179E-17	3.899E-17	5.261E-17	9.316E-17	1.639E-16	2.009E-16	1.199E-16	1.680E-17	
Th-230	Th-230	9.996E-01	1.189E-02	1.189E-02	1.189E-02	1.189E-02	1.189E-02	1.188E-02	1.185E-02	1.175E-02	
Th-230	Ra-226+D	9.996E-01	1.979E-04	5.929E-04	1.380E-03	4.098E-03	1.158E-02	3.466E-02	8.024E-02	1.315E-01	
Th-230	Pb-210+D	9.996E-01	1.996E-08	1.383E-07	7.144E-07	5.898E-06	4.006E-05	2.339E-04	6.919E-04	1.212E-03	
Th-230	Po-210	9.996E-01	1.016E-08	1.139E-07	8.128E-07	8.189E-06	5.949E-05	3.556E-04	1.057E-03	1.855E-03	
Th-230	ΣDSR(j)		1.209E-02	1.248E-02	1.327E-02	1.600E-02	2.356E-02	4.713E-02	9.384E-02	1.463E-01	
Th-230	Th-230	1.319E-06	1.569E-08	1.569E-08	1.569E-08	1.569E-08	1.569E-08	1.568E-08	1.564E-08	1.551E-08	
Th-230	Ra-226+D	1.319E-06	2.612E-10	7.826E-10	1.821E-09	5.410E-09	1.528E-08	4.576E-08	1.059E-07	1.736E-07	
Th-230	Pb-210+D1	1.319E-06	2.962E-14	2.052E-13	1.060E-12	8.755E-12	5.946E-11	3.472E-10	1.027E-09	1.800E-09	
Th-230	ΣDSR(j)		1.596E-08	1.648E-08	1.752E-08	2.111E-08	3.103E-08	6.178E-08	1.226E-07	1.909E-07	
Th-230	Th-230	1.899E-08	2.259E-10	2.259E-10	2.259E-10	2.259E-10	2.258E-10	2.256E-10	2.251E-10	2.232E-10	
Th-230	Ra-226+D	1.899E-08	3.759E-12	1.126E-11	2.621E-11	7.786E-11	2.200E-10	6.586E-10	1.525E-09	2.498E-09	
Th-230	Pb-210+D2	1.899E-08	2.695E-15	1.868E-14	9.649E-14	7.966E-13	5.411E-12	3.159E-11	9.344E-11	1.638E-10	
Th-230	ΣDSR(j)		2.297E-10	2.372E-10	2.522E-10	3.045E-10	4.512E-10	9.159E-10	1.843E-09	2.885E-09	

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.100E-04	2.497E-06	2.497E-06	2.497E-06	2.497E-06	2.497E-06	2.494E-06	2.488E-06	2.468E-06
Th-230	Ra-226+D1	2.100E-04	1.079E-07	3.234E-07	7.525E-07	2.235E-06	6.315E-06	1.891E-05	4.377E-05	7.172E-05
Th-230	Pb-210+D	2.100E-04	4.192E-12	2.904E-11	1.501E-10	1.239E-09	8.415E-09	4.914E-08	1.453E-07	2.547E-07
Th-230	Po-210	2.100E-04	2.135E-12	2.393E-11	1.707E-10	1.720E-09	1.250E-08	7.470E-08	2.221E-07	3.897E-07
Th-230	ΣDSR(j)		2.605E-06	2.821E-06	3.250E-06	4.736E-06	8.832E-06	2.153E-05	4.663E-05	7.483E-05
Th-230	Th-230	2.771E-10	3.297E-12	3.297E-12	3.296E-12	3.296E-12	3.295E-12	3.293E-12	3.285E-12	3.257E-12
Th-230	Ra-226+D1	2.771E-10	1.425E-13	4.269E-13	9.933E-13	2.951E-12	8.335E-12	2.496E-11	5.778E-11	9.467E-11
Th-230	Pb-210+D1	2.771E-10	6.221E-18	4.311E-17	2.227E-16	1.839E-15	1.249E-14	7.293E-14	2.157E-13	3.780E-13
Th-230	ΣDSR(j)		3.439E-12	3.723E-12	4.290E-12	6.249E-12	1.164E-11	2.833E-11	6.128E-11	9.831E-11
Th-230	Th-230	3.989E-12	4.745E-14	4.745E-14	4.745E-14	4.745E-14	4.743E-14	4.739E-14	4.728E-14	4.689E-14
Th-230	Ra-226+D1	3.989E-12	2.051E-15	6.145E-15	1.430E-14	4.247E-14	1.200E-13	3.593E-13	8.317E-13	1.363E-12
Th-230	Pb-210+D2	3.989E-12	5.661E-19	3.923E-18	2.027E-17	1.673E-16	1.136E-15	6.636E-15	1.963E-14	3.440E-14
Th-230	ΣDSR(j)		4.950E-14	5.360E-14	6.177E-14	9.009E-14	1.686E-13	4.133E-13	8.986E-13	1.444E-12
Th-230	Th-230	1.998E-04	2.376E-06	2.376E-06	2.376E-06	2.376E-06	2.375E-06	2.373E-06	2.368E-06	2.348E-06
Th-230	Ra-226+D2	1.998E-04	3.476E-08	1.041E-07	2.423E-07	7.198E-07	2.033E-06	6.089E-06	1.409E-05	2.310E-05
Th-230	Pb-210+D	1.998E-04	3.988E-12	2.763E-11	1.428E-10	1.179E-09	8.006E-09	4.675E-08	1.383E-07	2.423E-07
Th-230	Po-210	1.998E-04	2.031E-12	2.277E-11	1.624E-10	1.637E-09	1.189E-08	7.107E-08	2.113E-07	3.708E-07
Th-230	ΣDSR(j)		2.411E-06	2.480E-06	2.619E-06	3.098E-06	4.429E-06	8.580E-06	1.681E-05	2.606E-05
Th-230	Th-230	2.637E-10	3.136E-12	3.136E-12	3.136E-12	3.136E-12	3.135E-12	3.133E-12	3.125E-12	3.099E-12
Th-230	Ra-226+D2	2.637E-10	4.588E-14	1.375E-13	3.199E-13	9.502E-13	2.684E-12	8.037E-12	1.860E-11	3.049E-11
Th-230	Pb-210+D1	2.637E-10	5.919E-18	4.102E-17	2.119E-16	1.749E-15	1.188E-14	6.939E-14	2.052E-13	3.596E-13
Th-230	ΣDSR(j)		3.182E-12	3.274E-12	3.456E-12	4.088E-12	5.831E-12	1.124E-11	2.194E-11	3.394E-11
Th-230	Th-230	3.795E-12	4.515E-14	4.515E-14	4.514E-14	4.514E-14	4.513E-14	4.509E-14	4.498E-14	4.461E-14
Th-230	Ra-226+D2	3.795E-12	6.604E-16	1.979E-15	4.604E-15	1.368E-14	3.863E-14	1.157E-13	2.678E-13	4.388E-13
Th-230	Pb-210+D2	3.795E-12	5.386E-19	3.732E-18	1.928E-17	1.592E-16	1.081E-15	6.314E-15	1.867E-14	3.272E-14
Th-230	ΣDSR(j)		4.581E-14	4.713E-14	4.977E-14	5.898E-14	8.485E-14	1.671E-13	3.315E-13	5.161E-13
Th-230	Th-230	4.196E-08	4.991E-10	4.991E-10	4.991E-10	4.990E-10	4.989E-10	4.985E-10	4.973E-10	4.931E-10
Th-230	Ra-226+D3	4.196E-08	2.056E-11	6.162E-11	1.434E-10	4.259E-10	1.203E-09	3.603E-09	8.340E-09	1.367E-08
Th-230	Pb-210+D	4.196E-08	8.376E-16	5.804E-15	2.999E-14	2.476E-13	1.682E-12	9.820E-12	2.904E-11	5.089E-11
Th-230	Po-210	4.196E-08	4.266E-16	4.783E-15	3.412E-14	3.437E-13	2.497E-12	1.493E-11	4.439E-11	7.788E-11
Th-230	ΣDSR(j)		5.196E-10	5.607E-10	6.425E-10	9.255E-10	1.706E-09	4.126E-09	8.910E-09	1.429E-08
Th-230	Th-230	5.538E-14	6.588E-16	6.588E-16	6.588E-16	6.587E-16	6.586E-16	6.580E-16	6.564E-16	6.509E-16
Th-230	Ra-226+D3	5.538E-14	2.714E-17	8.133E-17	1.892E-16	5.622E-16	1.588E-15	4.756E-15	1.101E-14	1.804E-14
Th-230	Pb-210+D1	5.538E-14	1.243E-21	8.615E-21	4.451E-20	3.675E-19	2.496E-18	1.457E-17	4.311E-17	7.554E-17
Th-230	ΣDSR(j)		6.859E-16	7.401E-16	8.481E-16	1.221E-15	2.249E-15	5.428E-15	1.171E-14	1.876E-14
Th-230	Th-230	7.972E-16	9.483E-18	9.482E-18	9.482E-18	9.481E-18	9.479E-18	9.471E-18	9.449E-18	9.370E-18
Th-230	Ra-226+D3	7.972E-16	3.907E-19	1.171E-18	2.724E-18	8.092E-18	2.286E-17	6.845E-17	1.585E-16	2.596E-16
Th-230	Pb-210+D2	7.972E-16	1.131E-22	7.839E-22	4.050E-21	3.344E-20	2.271E-19	1.326E-18	3.922E-18	6.874E-18
Th-230	ΣDSR(j)		9.873E-18	1.065E-17	1.221E-17	1.761E-17	3.257E-17	7.925E-17	1.718E-16	2.759E-16

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.000E-07	2.379E-09	2.379E-09	2.379E-09	2.379E-09	2.378E-09	2.376E-09	2.370E-09	2.351E-09
Th-230	Ra-226+D4	2.000E-07	3.202E-13	9.593E-13	2.232E-12	6.631E-12	1.873E-11	5.609E-11	1.298E-10	2.127E-10
Th-230	Pb-210+D	2.000E-07	3.993E-15	2.767E-14	1.429E-13	1.180E-12	8.015E-12	4.681E-11	1.384E-10	2.426E-10
Th-230	Po-210	2.000E-07	2.034E-15	2.280E-14	1.626E-13	1.639E-12	1.190E-11	7.116E-11	2.116E-10	3.712E-10
Th-230	ΣDSR(j)		2.379E-09	2.380E-09	2.381E-09	2.388E-09	2.417E-09	2.550E-09	2.850E-09	3.177E-09
Th-230	Th-230	2.640E-13	3.140E-15	3.140E-15	3.140E-15	3.140E-15	3.139E-15	3.136E-15	3.129E-15	3.103E-15
Th-230	Ra-226+D4	2.640E-13	4.226E-19	1.266E-18	2.946E-18	8.753E-18	2.472E-17	7.404E-17	1.714E-16	2.808E-16
Th-230	Pb-210+D1	2.640E-13	5.926E-21	4.107E-20	2.122E-19	1.752E-18	1.190E-17	6.947E-17	2.055E-16	3.601E-16
Th-230	ΣDSR(j)		3.141E-15	3.142E-15	3.143E-15	3.150E-15	3.176E-15	3.280E-15	3.506E-15	3.744E-15
Th-230	Th-230	3.800E-15	4.520E-17	4.520E-17	4.520E-17	4.519E-17	4.518E-17	4.515E-17	4.504E-17	4.466E-17
Th-230	Ra-226+D4	3.800E-15	6.083E-21	1.823E-20	4.241E-20	1.260E-19	3.559E-19	1.066E-18	2.467E-18	4.042E-18
Th-230	Pb-210+D2	3.800E-15	5.393E-22	3.737E-21	1.931E-20	1.594E-19	1.083E-18	6.322E-18	1.870E-17	3.276E-17
Th-230	ΣDSR(j)		4.521E-17	4.522E-17	4.526E-17	4.548E-17	4.662E-17	5.253E-17	6.620E-17	8.147E-17
U-234	U-234	9.996E-01	1.449E-03	1.444E-03	1.434E-03	1.401E-03	1.311E-03	1.039E-03	5.347E-04	5.227E-05
U-234	Th-230	9.996E-01	5.461E-08	1.636E-07	3.804E-07	1.128E-06	3.171E-06	9.336E-06	2.074E-05	3.145E-05
U-234	Ra-226+D	9.996E-01	6.061E-10	4.235E-09	2.230E-08	1.967E-07	1.592E-06	1.501E-05	9.112E-05	3.134E-04
U-234	Pb-210+D	9.996E-01	4.593E-14	6.832E-13	7.824E-12	1.942E-10	3.964E-09	8.213E-08	7.248E-07	2.856E-06
U-234	Po-210	9.996E-01	1.969E-14	4.788E-13	7.941E-12	2.569E-10	5.781E-09	1.241E-07	1.106E-06	4.369E-06
U-234	ΣDSR(j)		1.449E-03	1.444E-03	1.435E-03	1.403E-03	1.316E-03	1.064E-03	6.484E-04	4.043E-04
U-234	U-234	1.319E-06	1.912E-09	1.906E-09	1.893E-09	1.850E-09	1.731E-09	1.372E-09	7.058E-10	6.899E-11
U-234	Th-230	1.319E-06	7.208E-14	2.159E-13	5.022E-13	1.489E-12	4.185E-12	1.232E-11	2.738E-11	4.151E-11
U-234	Ra-226+D	1.319E-06	8.001E-16	5.591E-15	2.943E-14	2.596E-13	2.102E-12	1.982E-11	1.203E-10	4.137E-10
U-234	Pb-210+D1	1.319E-06	6.817E-20	1.014E-18	1.161E-17	2.883E-16	5.884E-15	1.219E-13	1.076E-12	4.239E-12
U-234	ΣDSR(j)		1.912E-09	1.906E-09	1.894E-09	1.851E-09	1.737E-09	1.404E-09	8.546E-10	5.284E-10
U-234	U-234	1.899E-08	2.752E-11	2.743E-11	2.725E-11	2.662E-11	2.491E-11	1.974E-11	1.016E-11	9.931E-13
U-234	Th-230	1.899E-08	1.038E-15	3.108E-15	7.228E-15	2.143E-14	6.024E-14	1.774E-13	3.941E-13	5.975E-13
U-234	Ra-226+D	1.899E-08	1.152E-17	8.047E-17	4.237E-16	3.737E-15	3.025E-14	2.853E-13	1.731E-12	5.954E-12
U-234	Pb-210+D2	1.899E-08	6.203E-21	9.227E-20	1.057E-18	2.623E-17	5.354E-16	1.109E-14	9.789E-14	3.857E-13
U-234	ΣDSR(j)		2.752E-11	2.743E-11	2.726E-11	2.665E-11	2.500E-11	2.022E-11	1.238E-11	7.931E-12
U-234	U-234	2.100E-04	3.043E-07	3.032E-07	3.012E-07	2.943E-07	2.754E-07	2.183E-07	1.123E-07	1.098E-08
U-234	Th-230	2.100E-04	1.147E-11	3.436E-11	7.991E-11	2.370E-10	6.660E-10	1.961E-09	4.356E-09	6.605E-09
U-234	Ra-226+D1	2.100E-04	3.306E-13	2.310E-12	1.216E-11	1.073E-10	8.685E-10	8.190E-09	4.971E-08	1.710E-07
U-234	Pb-210+D	2.100E-04	9.647E-18	1.435E-16	1.643E-15	4.080E-14	8.327E-13	1.725E-11	1.522E-10	5.999E-10
U-234	Po-210	2.100E-04	4.136E-18	1.006E-16	1.668E-15	5.397E-14	1.214E-12	2.608E-11	2.323E-10	9.178E-10
U-234	ΣDSR(j)		3.043E-07	3.033E-07	3.013E-07	2.947E-07	2.769E-07	2.285E-07	1.668E-07	1.901E-07
U-234	U-234	2.771E-10	4.016E-13	4.003E-13	3.976E-13	3.885E-13	3.635E-13	2.881E-13	1.483E-13	1.449E-14
U-234	Th-230	2.771E-10	1.514E-17	4.535E-17	1.055E-16	3.128E-16	8.791E-16	2.588E-15	5.750E-15	8.719E-15
U-234	Ra-226+D1	2.771E-10	4.364E-19	3.050E-18	1.606E-17	1.416E-16	1.146E-15	1.081E-14	6.561E-14	2.257E-13
U-234	Pb-210+D1	2.771E-10	1.432E-23	2.130E-22	2.439E-21	6.055E-20	1.236E-18	2.560E-17	2.260E-16	8.904E-16
U-234	ΣDSR(j)		4.016E-13	4.003E-13	3.978E-13	3.890E-13	3.656E-13	3.015E-13	2.198E-13	2.498E-13

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	3.989E-12	5.781E-15	5.762E-15	5.724E-15	5.592E-15	5.233E-15	4.147E-15	2.134E-15	2.086E-16
U-234	Th-230	3.989E-12	2.179E-19	6.528E-19	1.518E-18	4.502E-18	1.265E-17	3.726E-17	8.277E-17	1.255E-16
U-234	Ra-226+D1	3.989E-12	6.282E-21	4.390E-20	2.311E-19	2.038E-18	1.650E-17	1.556E-16	9.444E-16	3.248E-15
U-234	Pb-210+D2	3.989E-12	1.303E-24	1.938E-23	2.220E-22	5.510E-21	1.125E-19	2.330E-18	2.056E-17	8.102E-17
U-234	ΣDSR(j)		5.781E-15	5.762E-15	5.725E-15	5.599E-15	5.262E-15	4.342E-15	3.182E-15	3.663E-15
U-234	U-234	1.998E-04	2.895E-07	2.885E-07	2.866E-07	2.800E-07	2.620E-07	2.077E-07	1.069E-07	1.044E-08
U-234	Th-230	1.998E-04	1.091E-11	3.269E-11	7.602E-11	2.254E-10	6.336E-10	1.866E-09	4.145E-09	6.285E-09
U-234	Ra-226+D2	1.998E-04	1.065E-13	7.440E-13	3.917E-12	3.454E-11	2.797E-10	2.637E-09	1.601E-08	5.505E-08
U-234	Pb-210+D	1.998E-04	9.178E-18	1.365E-16	1.564E-15	3.881E-14	7.922E-13	1.641E-11	1.448E-10	5.707E-10
U-234	Po-210	1.998E-04	3.935E-18	9.569E-17	1.587E-15	5.134E-14	1.155E-12	2.481E-11	2.210E-10	8.732E-10
U-234	ΣDSR(j)		2.895E-07	2.885E-07	2.867E-07	2.803E-07	2.629E-07	2.122E-07	1.274E-07	7.322E-08
U-234	U-234	2.637E-10	3.821E-13	3.808E-13	3.783E-13	3.696E-13	3.459E-13	2.741E-13	1.411E-13	1.379E-14
U-234	Th-230	2.637E-10	1.440E-17	4.315E-17	1.004E-16	2.976E-16	8.364E-16	2.463E-15	5.471E-15	8.296E-15
U-234	Ra-226+D2	2.637E-10	1.405E-19	9.820E-19	5.170E-18	4.560E-17	3.691E-16	3.481E-15	2.113E-14	7.266E-14
U-234	Pb-210+D1	2.637E-10	1.362E-23	2.026E-22	2.321E-21	5.761E-20	1.176E-18	2.436E-17	2.150E-16	8.471E-16
U-234	ΣDSR(j)		3.821E-13	3.809E-13	3.784E-13	3.700E-13	3.471E-13	2.801E-13	1.679E-13	9.559E-14
U-234	U-234	3.795E-12	5.500E-15	5.482E-15	5.446E-15	5.320E-15	4.978E-15	3.945E-15	2.030E-15	1.985E-16
U-234	Th-230	3.795E-12	2.073E-19	6.211E-19	1.444E-18	4.283E-18	1.204E-17	3.545E-17	7.875E-17	1.194E-16
U-234	Ra-226+D2	3.795E-12	2.023E-21	1.414E-20	7.442E-20	6.563E-19	5.313E-18	5.011E-17	3.041E-16	1.046E-15
U-234	Pb-210+D2	3.795E-12	1.240E-24	1.844E-23	2.112E-22	5.242E-21	1.070E-19	2.217E-18	1.956E-17	7.708E-17
U-234	ΣDSR(j)		5.500E-15	5.482E-15	5.447E-15	5.325E-15	4.996E-15	4.033E-15	2.433E-15	1.441E-15
U-234	U-234	4.196E-08	6.080E-11	6.060E-11	6.020E-11	5.882E-11	5.504E-11	4.362E-11	2.244E-11	2.194E-12
U-234	Th-230	4.196E-08	2.292E-15	6.866E-15	1.597E-14	4.735E-14	1.331E-13	3.919E-13	8.706E-13	1.320E-12
U-234	Ra-226+D3	4.196E-08	6.299E-17	4.402E-16	2.317E-15	2.044E-14	1.655E-13	1.560E-12	9.470E-12	3.257E-11
U-234	Pb-210+D	4.196E-08	1.928E-21	2.868E-20	3.284E-19	8.153E-18	1.664E-16	3.447E-15	3.042E-14	1.199E-13
U-234	Po-210	4.196E-08	8.266E-22	2.010E-20	3.333E-19	1.078E-17	2.427E-16	5.211E-15	4.643E-14	1.834E-13
U-234	ΣDSR(j)		6.081E-11	6.061E-11	6.022E-11	5.888E-11	5.533E-11	4.558E-11	3.286E-11	3.639E-11
U-234	U-234	5.538E-14	8.026E-17	7.999E-17	7.946E-17	7.764E-17	7.265E-17	5.757E-17	2.963E-17	2.896E-18
U-234	Th-230	5.538E-14	3.026E-21	9.063E-21	2.108E-20	6.251E-20	1.757E-19	5.173E-19	1.149E-18	1.742E-18
U-234	Ra-226+D3	5.538E-14	8.315E-23	5.810E-22	3.059E-21	2.698E-20	2.184E-19	2.060E-18	1.250E-17	4.299E-17
U-234	Pb-210+D1	5.538E-14	2.861E-27	4.257E-26	4.875E-25	1.210E-23	2.470E-22	5.117E-21	4.516E-20	1.779E-19
U-234	ΣDSR(j)		8.026E-17	8.000E-17	7.949E-17	7.773E-17	7.304E-17	6.016E-17	4.332E-17	4.781E-17
U-234	U-234	7.972E-16	1.155E-18	1.151E-18	1.144E-18	1.118E-18	1.046E-18	8.287E-19	4.264E-19	4.168E-20
U-234	Th-230	7.972E-16	4.355E-23	1.305E-22	3.034E-22	8.997E-22	2.529E-21	7.446E-21	1.654E-20	2.508E-20
U-234	Ra-226+D3	7.972E-16	1.197E-24	8.364E-24	4.403E-23	3.883E-22	3.144E-21	2.965E-20	1.799E-19	6.188E-19
U-234	Pb-210+D2	7.972E-16	2.604E-28	3.873E-27	4.436E-26	1.101E-24	2.247E-23	4.656E-22	4.109E-21	1.619E-20
U-234	ΣDSR(j)		1.155E-18	1.152E-18	1.144E-18	1.119E-18	1.051E-18	8.663E-19	6.270E-19	7.018E-19

Summary : Recreator (Indoor Worker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.000E-07	2.898E-10	2.889E-10	2.870E-10	2.804E-10	2.623E-10	2.079E-10	1.070E-10	1.046E-11
U-234	Th-230	2.000E-07	1.093E-14	3.273E-14	7.612E-14	2.257E-13	6.344E-13	1.868E-12	4.150E-12	6.292E-12
U-234	Ra-226+D4	2.000E-07	9.807E-19	6.853E-18	3.608E-17	3.182E-16	2.576E-15	2.429E-14	1.474E-13	5.071E-13
U-234	Pb-210+D	2.000E-07	9.189E-21	1.367E-19	1.566E-18	3.886E-17	7.932E-16	1.643E-14	1.450E-13	5.714E-13
U-234	Po-210	2.000E-07	3.940E-21	9.581E-20	1.589E-18	5.141E-17	1.157E-15	2.484E-14	2.213E-13	8.742E-13
U-234	ΣDSR(j)		2.898E-10	2.889E-10	2.870E-10	2.806E-10	2.630E-10	2.098E-10	1.116E-10	1.870E-11
U-234	U-234	2.640E-13	3.826E-16	3.813E-16	3.788E-16	3.701E-16	3.463E-16	2.744E-16	1.412E-16	1.380E-17
U-234	Th-230	2.640E-13	1.442E-20	4.320E-20	1.005E-19	2.979E-19	8.374E-19	2.466E-18	5.478E-18	8.306E-18
U-234	Ra-226+D4	2.640E-13	1.295E-24	9.046E-24	4.763E-23	4.200E-22	3.400E-21	3.207E-20	1.946E-19	6.694E-19
U-234	Pb-210+D1	2.640E-13	1.364E-26	2.029E-25	2.324E-24	5.768E-23	1.177E-21	2.439E-20	2.153E-19	8.481E-19
U-234	ΣDSR(j)		3.826E-16	3.813E-16	3.789E-16	3.704E-16	3.471E-16	2.770E-16	1.471E-16	2.363E-17
U-234	U-234	3.800E-15	5.507E-18	5.488E-18	5.452E-18	5.327E-18	4.984E-18	3.950E-18	2.033E-18	1.987E-19
U-234	Th-230	3.800E-15	2.076E-22	6.218E-22	1.446E-21	4.289E-21	1.205E-20	3.549E-20	7.884E-20	1.196E-19
U-234	Ra-226+D4	3.800E-15	1.863E-26	1.302E-25	6.855E-25	6.046E-24	4.895E-23	4.616E-22	2.801E-21	9.635E-21
U-234	Pb-210+D2	3.800E-15	1.241E-27	1.846E-26	2.114E-25	5.249E-24	1.071E-22	2.219E-21	1.959E-20	7.717E-20
U-234	ΣDSR(j)		5.507E-18	5.489E-18	5.454E-18	5.331E-18	4.997E-18	3.988E-18	2.134E-18	4.051E-19
U-238	U-238	5.450E-07	6.820E-10	6.797E-10	6.752E-10	6.597E-10	6.173E-10	4.894E-10	2.520E-10	2.468E-11
U-238+D	U-238+D	1.599E-03	1.172E-03	1.168E-03	1.161E-03	1.134E-03	1.061E-03	8.412E-04	4.331E-04	4.242E-05
U-238+D	U-234	1.599E-03	3.270E-12	9.781E-12	2.267E-11	6.646E-11	1.807E-10	4.718E-10	7.262E-10	2.366E-10
U-238+D	Th-230	1.599E-03	8.218E-17	5.742E-16	3.022E-15	2.662E-14	2.148E-13	2.002E-12	1.178E-11	3.757E-11
U-238+D	Ra-226+D	1.599E-03	6.843E-19	1.024E-17	1.190E-16	3.104E-15	7.242E-14	2.199E-12	3.722E-11	3.207E-10
U-238+D	Pb-210+D	1.599E-03	4.153E-23	1.278E-21	3.169E-20	2.338E-18	1.414E-16	1.014E-14	2.732E-13	2.871E-12
U-238+D	Po-210	1.599E-03	1.540E-23	7.856E-22	2.911E-20	2.955E-18	2.026E-16	1.524E-14	4.161E-13	4.392E-12
U-238+D	ΣDSR(j)		1.172E-03	1.168E-03	1.161E-03	1.134E-03	1.061E-03	8.412E-04	4.331E-04	4.242E-05
U-238+D	U-238+D	2.111E-09	1.547E-09	1.542E-09	1.532E-09	1.497E-09	1.401E-09	1.110E-09	5.717E-10	5.599E-11
U-238+D	U-234	2.111E-09	4.316E-18	1.291E-17	2.993E-17	8.773E-17	2.385E-16	6.228E-16	9.585E-16	3.123E-16
U-238+D	Th-230	2.111E-09	1.085E-22	7.579E-22	3.989E-21	3.514E-20	2.835E-19	2.643E-18	1.556E-17	4.959E-17
U-238+D	Ra-226+D	2.111E-09	9.033E-25	1.352E-23	1.570E-22	4.097E-21	9.560E-20	2.903E-18	4.913E-17	4.233E-16
U-238+D	Pb-210+D1	2.111E-09	6.164E-29	1.897E-27	4.703E-26	3.471E-24	2.098E-22	1.504E-20	4.055E-19	4.262E-18
U-238+D	ΣDSR(j)		1.547E-09	1.542E-09	1.532E-09	1.497E-09	1.401E-09	1.110E-09	5.717E-10	5.599E-11
U-238+D	U-238+D	3.039E-11	2.227E-11	2.220E-11	2.205E-11	2.155E-11	2.016E-11	1.598E-11	8.229E-12	8.060E-13
U-238+D	U-234	3.039E-11	6.213E-20	1.858E-19	4.308E-19	1.263E-18	3.433E-18	8.965E-18	1.380E-17	4.495E-18
U-238+D	Th-230	3.039E-11	1.561E-24	1.091E-23	5.742E-23	5.058E-22	4.081E-21	3.804E-20	2.239E-19	7.138E-19
U-238+D	Ra-226+D	3.039E-11	1.300E-26	1.946E-25	2.260E-24	5.897E-23	1.376E-21	4.178E-20	7.072E-19	6.093E-18
U-238+D	Pb-210+D2	3.039E-11	5.609E-30	1.726E-28	4.280E-27	3.158E-25	1.909E-23	1.369E-21	3.690E-20	3.878E-19
U-238+D	ΣDSR(j)		2.227E-11	2.220E-11	2.205E-11	2.155E-11	2.016E-11	1.598E-11	8.229E-12	8.060E-13

Summary : Recreator (Indoor Worker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	3.359E-07	2.462E-07	2.454E-07	2.438E-07	2.382E-07	2.229E-07	1.767E-07	9.097E-08	8.910E-09
U-238+D	U-234	3.359E-07	6.869E-16	2.054E-15	4.763E-15	1.396E-14	3.795E-14	9.910E-14	1.525E-13	4.969E-14
U-238+D	Th-230	3.359E-07	1.726E-20	1.206E-19	6.347E-19	5.591E-18	4.511E-17	4.206E-16	2.475E-15	7.891E-15
U-238+D	Ra-226+D1	3.359E-07	3.733E-22	5.588E-21	6.490E-20	1.693E-18	3.951E-17	1.200E-15	2.030E-14	1.749E-13
U-238+D	Pb-210+D	3.359E-07	8.723E-27	2.684E-25	6.656E-24	4.912E-22	2.969E-20	2.129E-18	5.738E-17	6.031E-16
U-238+D	Po-210	3.359E-07	3.234E-27	1.650E-25	6.115E-24	6.208E-22	4.255E-20	3.200E-18	8.741E-17	9.225E-16
U-238+D	ΣDSR(j)		2.462E-07	2.454E-07	2.438E-07	2.382E-07	2.229E-07	1.767E-07	9.097E-08	8.910E-09
U-238+D	U-238+D	4.434E-13	3.250E-13	3.240E-13	3.218E-13	3.144E-13	2.942E-13	2.332E-13	1.201E-13	1.176E-14
U-238+D	U-234	4.434E-13	9.066E-22	2.712E-21	6.287E-21	1.843E-20	5.009E-20	1.308E-19	2.013E-19	6.559E-20
U-238+D	Th-230	4.434E-13	2.279E-26	1.592E-25	8.378E-25	7.381E-24	5.955E-23	5.551E-22	3.267E-21	1.042E-20
U-238+D	Ra-226+D1	4.434E-13	4.927E-28	7.376E-27	8.566E-26	2.235E-24	5.215E-23	1.583E-21	2.680E-20	2.309E-19
U-238+D	Pb-210+D1	4.434E-13	1.295E-32	3.984E-31	9.879E-30	7.290E-28	4.407E-26	3.160E-24	8.517E-23	8.952E-22
U-238+D	ΣDSR(j)		3.250E-13	3.240E-13	3.218E-13	3.144E-13	2.942E-13	2.332E-13	1.201E-13	1.176E-14
U-238+D	U-238+D	6.383E-15	4.679E-15	4.663E-15	4.632E-15	4.526E-15	4.235E-15	3.357E-15	1.728E-15	1.693E-16
U-238+D	U-234	6.383E-15	1.305E-23	3.904E-23	9.049E-23	2.652E-22	7.210E-22	1.883E-21	2.898E-21	9.441E-22
U-238+D	Th-230	6.383E-15	3.280E-28	2.291E-27	1.206E-26	1.062E-25	8.572E-25	7.990E-24	4.703E-23	1.499E-22
U-238+D	Ra-226+D1	6.383E-15	7.092E-30	1.062E-28	1.233E-27	3.217E-26	7.506E-25	2.279E-23	3.858E-22	3.324E-21
U-238+D	Pb-210+D2	6.383E-15	1.178E-33	3.626E-32	8.989E-31	6.634E-29	4.010E-27	2.875E-25	7.750E-24	8.146E-23
U-238+D	ΣDSR(j)		4.679E-15	4.663E-15	4.632E-15	4.526E-15	4.235E-15	3.357E-15	1.728E-15	1.693E-16
U-238+D	U-238+D	3.196E-07	2.343E-07	2.335E-07	2.320E-07	2.266E-07	2.121E-07	1.681E-07	8.655E-08	8.477E-09
U-238+D	U-234	3.196E-07	6.535E-16	1.955E-15	4.531E-15	1.328E-14	3.610E-14	9.429E-14	1.451E-13	4.727E-14
U-238+D	Th-230	3.196E-07	1.642E-20	1.147E-19	6.039E-19	5.320E-18	4.292E-17	4.001E-16	2.355E-15	7.507E-15
U-238+D	Ra-226+D2	3.196E-07	1.202E-22	1.799E-21	2.090E-20	5.452E-19	1.272E-17	3.863E-16	6.538E-15	5.633E-14
U-238+D	Pb-210+D	3.196E-07	8.300E-27	2.554E-25	6.332E-24	4.673E-22	2.825E-20	2.025E-18	5.459E-17	5.738E-16
U-238+D	Po-210	3.196E-07	3.077E-27	1.570E-25	5.818E-24	5.906E-22	4.048E-20	3.045E-18	8.316E-17	8.777E-16
U-238+D	ΣDSR(j)		2.343E-07	2.335E-07	2.320E-07	2.266E-07	2.121E-07	1.681E-07	8.655E-08	8.477E-09
U-238+D	U-238+D	4.219E-13	3.092E-13	3.082E-13	3.062E-13	2.992E-13	2.799E-13	2.219E-13	1.143E-13	1.119E-14
U-238+D	U-234	4.219E-13	8.626E-22	2.580E-21	5.981E-21	1.753E-20	4.766E-20	1.245E-19	1.916E-19	6.240E-20
U-238+D	Th-230	4.219E-13	2.168E-26	1.515E-25	7.971E-25	7.022E-24	5.666E-23	5.282E-22	3.109E-21	9.910E-21
U-238+D	Ra-226+D2	4.219E-13	1.587E-28	2.375E-27	2.758E-26	7.196E-25	1.679E-23	5.099E-22	8.630E-21	7.435E-20
U-238+D	Pb-210+D1	4.219E-13	1.232E-32	3.791E-31	9.399E-30	6.936E-28	4.193E-26	3.006E-24	8.103E-23	8.517E-22
U-238+D	ΣDSR(j)		3.092E-13	3.082E-13	3.062E-13	2.992E-13	2.799E-13	2.219E-13	1.143E-13	1.119E-14
U-238+D	U-238+D	6.073E-15	4.451E-15	4.437E-15	4.407E-15	4.306E-15	4.029E-15	3.194E-15	1.645E-15	1.611E-16
U-238+D	U-234	6.073E-15	1.242E-23	3.714E-23	8.609E-23	2.524E-22	6.860E-22	1.791E-21	2.757E-21	8.982E-22
U-238+D	Th-230	6.073E-15	3.120E-28	2.180E-27	1.147E-26	1.011E-25	8.155E-25	7.602E-24	4.474E-23	1.426E-22
U-238+D	Ra-226+D2	6.073E-15	2.284E-30	3.419E-29	3.970E-28	1.036E-26	2.417E-25	7.339E-24	1.242E-22	1.070E-21
U-238+D	Pb-210+D2	6.073E-15	1.121E-33	3.449E-32	8.552E-31	6.311E-29	3.816E-27	2.736E-25	7.373E-24	7.750E-23
U-238+D	ΣDSR(j)		4.451E-15	4.437E-15	4.407E-15	4.306E-15	4.029E-15	3.194E-15	1.645E-15	1.611E-16

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D	U-238+D	6.713E-11	4.921E-11	4.905E-11	4.872E-11	4.760E-11	4.454E-11	3.531E-11	1.818E-11	1.781E-12
U-238+D	U-234	6.713E-11	1.373E-19	4.106E-19	9.518E-19	2.790E-18	7.583E-18	1.980E-17	3.048E-17	9.930E-18
U-238+D	Th-230	6.713E-11	3.450E-24	2.410E-23	1.268E-22	1.117E-21	9.015E-21	8.404E-20	4.946E-19	1.577E-18
U-238+D	Ra-226+D3	6.713E-11	7.112E-26	1.065E-24	1.236E-23	3.226E-22	7.527E-21	2.286E-19	3.868E-18	3.333E-17
U-238+D	Pb-210+D	6.713E-11	1.743E-30	5.365E-29	1.330E-27	9.815E-26	5.934E-24	4.254E-22	1.147E-20	1.205E-19
U-238+D	Po-210	6.713E-11	6.464E-31	3.297E-29	1.222E-27	1.241E-25	8.503E-24	6.395E-22	1.747E-20	1.843E-19
U-238+D	ΣDSR(j)		4.921E-11	4.905E-11	4.872E-11	4.760E-11	4.454E-11	3.531E-11	1.818E-11	1.781E-12
U-238+D	U-238+D	8.862E-17	6.496E-17	6.474E-17	6.431E-17	6.283E-17	5.880E-17	4.661E-17	2.400E-17	2.350E-18
U-238+D	U-234	8.862E-17	1.812E-25	5.420E-25	1.256E-24	3.683E-24	1.001E-23	2.614E-23	4.024E-23	1.311E-23
U-238+D	Th-230	8.862E-17	4.553E-30	3.181E-29	1.674E-28	1.475E-27	1.190E-26	1.109E-25	6.529E-25	2.081E-24
U-238+D	Ra-226+D3	8.862E-17	9.388E-32	1.405E-30	1.632E-29	4.258E-28	9.936E-27	3.017E-25	5.106E-24	4.399E-23
U-238+D	Pb-210+D1	8.862E-17	2.587E-36	7.963E-35	1.974E-33	1.457E-31	8.808E-30	6.315E-28	1.702E-26	1.789E-25
U-238+D	ΣDSR(j)		6.496E-17	6.474E-17	6.431E-17	6.283E-17	5.880E-17	4.661E-17	2.400E-17	2.350E-18
U-238+D	U-238+D	1.276E-18	9.350E-19	9.319E-19	9.257E-19	9.044E-19	8.464E-19	6.709E-19	3.454E-19	3.383E-20
U-238+D	U-234	1.276E-18	2.608E-27	7.801E-27	1.808E-26	5.301E-26	1.441E-25	3.763E-25	5.791E-25	1.887E-25
U-238+D	Th-230	1.276E-18	6.554E-32	4.579E-31	2.410E-30	2.123E-29	1.713E-28	1.597E-27	9.398E-27	2.996E-26
U-238+D	Ra-226+D3	1.276E-18	1.351E-33	2.023E-32	2.349E-31	6.129E-30	1.430E-28	4.342E-27	7.350E-26	6.332E-25
U-238+D	Pb-210+D2	1.276E-18	2.354E-37	7.245E-36	1.796E-34	1.326E-32	8.014E-31	5.746E-29	1.549E-27	1.628E-26
U-238+D	ΣDSR(j)		9.350E-19	9.319E-19	9.257E-19	9.044E-19	8.464E-19	6.709E-19	3.454E-19	3.383E-20
U-238+D	U-238+D	3.200E-10	2.346E-10	2.338E-10	2.322E-10	2.269E-10	2.123E-10	1.683E-10	8.666E-11	8.487E-12
U-238+D	U-234	3.200E-10	6.543E-19	1.957E-18	4.537E-18	1.330E-17	3.615E-17	9.440E-17	1.453E-16	4.733E-17
U-238+D	Th-230	3.200E-10	1.644E-23	1.149E-22	6.046E-22	5.326E-21	4.297E-20	4.006E-19	2.358E-18	7.516E-18
U-238+D	Ra-226+D4	3.200E-10	1.107E-27	1.657E-26	1.925E-25	5.022E-24	1.172E-22	3.558E-21	6.022E-20	5.189E-19
U-238+D	Pb-210+D	3.200E-10	8.310E-30	2.557E-28	6.340E-27	4.679E-25	2.829E-23	2.028E-21	5.466E-20	5.745E-19
U-238+D	Po-210	3.200E-10	3.081E-30	1.572E-28	5.825E-27	5.913E-25	4.053E-23	3.048E-21	8.326E-20	8.787E-19
U-238+D	ΣDSR(j)		2.346E-10	2.338E-10	2.322E-10	2.269E-10	2.123E-10	1.683E-10	8.666E-11	8.487E-12
U-238+D	U-238+D	4.224E-16	3.096E-16	3.086E-16	3.066E-16	2.995E-16	2.803E-16	2.222E-16	1.144E-16	1.120E-17
U-238+D	U-234	4.224E-16	8.636E-25	2.583E-24	5.988E-24	1.755E-23	4.771E-23	1.246E-22	1.918E-22	6.248E-23
U-238+D	Th-230	4.224E-16	2.170E-29	1.516E-28	7.981E-28	7.031E-27	5.673E-26	5.288E-25	3.112E-24	9.922E-24
U-238+D	Ra-226+D4	4.224E-16	1.461E-33	2.188E-32	2.541E-31	6.629E-30	1.547E-28	4.697E-27	7.950E-26	6.849E-25
U-238+D	Pb-210+D1	4.224E-16	1.233E-35	3.796E-34	9.410E-33	6.944E-31	4.198E-29	3.010E-27	8.113E-26	8.527E-25
U-238+D	ΣDSR(j)		3.096E-16	3.086E-16	3.066E-16	2.995E-16	2.803E-16	2.222E-16	1.144E-16	1.120E-17
U-238+D	U-238+D	6.080E-18	4.457E-18	4.442E-18	4.413E-18	4.311E-18	4.034E-18	3.198E-18	1.647E-18	1.613E-19
U-238+D	U-234	6.080E-18	1.243E-26	3.718E-26	8.620E-26	2.527E-25	6.868E-25	1.794E-24	2.761E-24	8.993E-25
U-238+D	Th-230	6.080E-18	3.124E-31	2.183E-30	1.149E-29	1.012E-28	8.165E-28	7.611E-27	4.480E-26	1.428E-25
U-238+D	Ra-226+D4	6.080E-18	2.104E-35	3.149E-34	3.657E-33	9.541E-32	2.226E-30	6.761E-29	1.144E-27	9.858E-27
U-238+D	Pb-210+D2	6.080E-18	1.122E-36	3.454E-35	8.563E-34	6.319E-32	3.820E-30	2.739E-28	7.382E-27	7.759E-26
U-238+D	ΣDSR(j)		4.457E-18	4.442E-18	4.413E-18	4.311E-18	4.034E-18	3.198E-18	1.647E-18	1.613E-19

Summary : Recreator (Indoor Worker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	9.980E-01	1.426E-02	1.421E-02	1.412E-02	1.380E-02	1.291E-02	1.023E-02	5.269E-03	5.160E-04
U-238+D1	U-234	9.980E-01	2.041E-09	6.103E-09	1.415E-08	4.147E-08	1.127E-07	2.944E-07	4.531E-07	1.476E-07
U-238+D1	Th-230	9.980E-01	5.128E-14	3.583E-13	1.886E-12	1.661E-11	1.340E-10	1.249E-09	7.353E-09	2.344E-08
U-238+D1	Ra-226+D	9.980E-01	4.270E-16	6.392E-15	7.424E-14	1.937E-12	4.519E-11	1.372E-09	2.323E-08	2.001E-07
U-238+D1	Pb-210+D	9.980E-01	2.592E-20	7.975E-19	1.977E-17	1.459E-15	8.822E-14	6.325E-12	1.705E-10	1.792E-09
U-238+D1	Po-210	9.980E-01	9.609E-21	4.902E-19	1.817E-17	1.844E-15	1.264E-13	9.507E-12	2.597E-10	2.741E-09
U-238+D1	ΣDSR(j)		1.426E-02	1.421E-02	1.412E-02	1.380E-02	1.291E-02	1.023E-02	5.269E-03	5.164E-04
U-238+D1	U-238+D1	1.317E-06	1.882E-08	1.876E-08	1.864E-08	1.821E-08	1.704E-08	1.351E-08	6.955E-09	6.811E-10
U-238+D1	U-234	1.317E-06	2.693E-15	8.057E-15	1.868E-14	5.474E-14	1.488E-13	3.886E-13	5.981E-13	1.949E-13
U-238+D1	Th-230	1.317E-06	6.769E-20	4.729E-19	2.489E-18	2.193E-17	1.769E-16	1.649E-15	9.706E-15	3.094E-14
U-238+D1	Ra-226+D	1.317E-06	5.636E-22	8.438E-21	9.799E-20	2.556E-18	5.965E-17	1.811E-15	3.066E-14	2.641E-13
U-238+D1	Pb-210+D1	1.317E-06	3.847E-26	1.184E-24	2.935E-23	2.166E-21	1.309E-19	9.387E-18	2.530E-16	2.659E-15
U-238+D1	ΣDSR(j)		1.882E-08	1.876E-08	1.864E-08	1.821E-08	1.704E-08	1.351E-08	6.955E-09	6.816E-10
U-238+D1	U-238+D1	1.896E-08	2.710E-10	2.701E-10	2.683E-10	2.621E-10	2.453E-10	1.944E-10	1.001E-10	9.804E-12
U-238+D1	U-234	1.896E-08	3.877E-17	1.160E-16	2.688E-16	7.880E-16	2.142E-15	5.594E-15	8.610E-15	2.805E-15
U-238+D1	Th-230	1.896E-08	9.743E-22	6.807E-21	3.583E-20	3.156E-19	2.546E-18	2.374E-17	1.397E-16	4.454E-16
U-238+D1	Ra-226+D	1.896E-08	8.113E-24	1.214E-22	1.411E-21	3.680E-20	8.587E-19	2.607E-17	4.413E-16	3.802E-15
U-238+D1	Pb-210+D2	1.896E-08	3.500E-27	1.077E-25	2.670E-24	1.971E-22	1.191E-20	8.542E-19	2.302E-17	2.420E-16
U-238+D1	ΣDSR(j)		2.710E-10	2.701E-10	2.683E-10	2.621E-10	2.453E-10	1.944E-10	1.001E-10	9.812E-12
U-238+D1	U-238+D1	2.096E-04	2.995E-06	2.985E-06	2.966E-06	2.898E-06	2.712E-06	2.149E-06	1.107E-06	1.084E-07
U-238+D1	U-234	2.096E-04	4.286E-13	1.282E-12	2.972E-12	8.711E-12	2.368E-11	6.184E-11	9.518E-11	3.101E-11
U-238+D1	Th-230	2.096E-04	1.077E-17	7.526E-17	3.961E-16	3.489E-15	2.815E-14	2.624E-13	1.545E-12	4.924E-12
U-238+D1	Ra-226+D1	2.096E-04	2.329E-19	3.487E-18	4.050E-17	1.056E-15	2.465E-14	7.485E-13	1.267E-11	1.092E-10
U-238+D1	Pb-210+D	2.096E-04	5.443E-24	1.675E-22	4.153E-21	3.065E-19	1.853E-17	1.328E-15	3.581E-14	3.764E-13
U-238+D1	Po-210	2.096E-04	2.018E-24	1.030E-22	3.816E-21	3.874E-19	2.655E-17	1.997E-15	5.454E-14	5.756E-13
U-238+D1	ΣDSR(j)		2.995E-06	2.985E-06	2.966E-06	2.898E-06	2.712E-06	2.149E-06	1.107E-06	1.085E-07
U-238+D1	U-238+D1	2.767E-10	3.954E-12	3.941E-12	3.915E-12	3.825E-12	3.579E-12	2.837E-12	1.461E-12	1.431E-13
U-238+D1	U-234	2.767E-10	5.657E-19	1.692E-18	3.923E-18	1.150E-17	3.126E-17	8.163E-17	1.256E-16	4.093E-17
U-238+D1	Th-230	2.767E-10	1.422E-23	9.934E-23	5.228E-22	4.606E-21	3.716E-20	3.464E-19	2.039E-18	6.499E-18
U-238+D1	Ra-226+D1	2.767E-10	3.075E-25	4.603E-24	5.345E-23	1.394E-21	3.254E-20	9.881E-19	1.672E-17	1.441E-16
U-238+D1	Pb-210+D1	2.767E-10	8.079E-30	2.486E-28	6.164E-27	4.549E-25	2.750E-23	1.972E-21	5.315E-20	5.586E-19
U-238+D1	ΣDSR(j)		3.954E-12	3.941E-12	3.915E-12	3.825E-12	3.579E-12	2.837E-12	1.461E-12	1.433E-13
U-238+D1	U-238+D1	3.983E-12	5.691E-14	5.672E-14	5.635E-14	5.505E-14	5.152E-14	4.084E-14	2.103E-14	2.059E-15
U-238+D1	U-234	3.983E-12	8.143E-21	2.436E-20	5.647E-20	1.655E-19	4.499E-19	1.175E-18	1.808E-18	5.891E-19
U-238+D1	Th-230	3.983E-12	2.047E-25	1.430E-24	7.525E-24	6.629E-23	5.349E-22	4.986E-21	2.935E-20	9.355E-20
U-238+D1	Ra-226+D1	3.983E-12	4.426E-27	6.625E-26	7.694E-25	2.007E-23	4.684E-22	1.422E-20	2.407E-19	2.074E-18
U-238+D1	Pb-210+D2	3.983E-12	7.352E-31	2.262E-29	5.609E-28	4.139E-26	2.503E-24	1.794E-22	4.836E-21	5.083E-20
U-238+D1	ΣDSR(j)		5.691E-14	5.672E-14	5.635E-14	5.505E-14	5.152E-14	4.084E-14	2.103E-14	2.062E-15

Summary : Recreator (Indoor Worker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.994E-04	2.850E-06	2.840E-06	2.822E-06	2.757E-06	2.580E-06	2.045E-06	1.053E-06	1.031E-07
U-238+D1	U-234	1.994E-04	4.078E-13	1.220E-12	2.827E-12	8.288E-12	2.253E-11	5.884E-11	9.055E-11	2.950E-11
U-238+D1	Th-230	1.994E-04	1.025E-17	7.160E-17	3.768E-16	3.320E-15	2.678E-14	2.497E-13	1.469E-12	4.685E-12
U-238+D1	Ra-226+D2	1.994E-04	7.500E-20	1.123E-18	1.304E-17	3.402E-16	7.938E-15	2.410E-13	4.080E-12	3.515E-11
U-238+D1	Pb-210+D	1.994E-04	5.179E-24	1.594E-22	3.951E-21	2.916E-19	1.763E-17	1.264E-15	3.407E-14	3.581E-13
U-238+D1	Po-210	1.994E-04	1.920E-24	9.796E-23	3.631E-21	3.685E-19	2.526E-17	1.900E-15	5.189E-14	5.477E-13
U-238+D1	ΣDSR(j)		2.850E-06	2.840E-06	2.822E-06	2.757E-06	2.580E-06	2.045E-06	1.053E-06	1.032E-07
U-238+D1	U-238+D1	2.633E-10	3.762E-12	3.749E-12	3.725E-12	3.639E-12	3.405E-12	2.699E-12	1.390E-12	1.361E-13
U-238+D1	U-234	2.633E-10	5.383E-19	1.610E-18	3.732E-18	1.094E-17	2.974E-17	7.766E-17	1.195E-16	3.894E-17
U-238+D1	Th-230	2.633E-10	1.353E-23	9.451E-23	4.974E-22	4.382E-21	3.535E-20	3.296E-19	1.940E-18	6.184E-18
U-238+D1	Ra-226+D2	2.633E-10	9.900E-26	1.482E-24	1.721E-23	4.490E-22	1.048E-20	3.182E-19	5.385E-18	4.639E-17
U-238+D1	Pb-210+D1	2.633E-10	7.687E-30	2.366E-28	5.865E-27	4.328E-25	2.617E-23	1.876E-21	5.056E-20	5.315E-19
U-238+D1	ΣDSR(j)		3.762E-12	3.749E-12	3.725E-12	3.639E-12	3.405E-12	2.699E-12	1.390E-12	1.362E-13
U-238+D1	U-238+D1	3.789E-12	5.415E-14	5.397E-14	5.361E-14	5.238E-14	4.902E-14	3.885E-14	2.000E-14	1.959E-15
U-238+D1	U-234	3.789E-12	7.748E-21	2.317E-20	5.372E-20	1.575E-19	4.280E-19	1.118E-18	1.721E-18	5.605E-19
U-238+D1	Th-230	3.789E-12	1.947E-25	1.360E-24	7.160E-24	6.307E-23	5.089E-22	4.744E-21	2.792E-20	8.901E-20
U-238+D1	Ra-226+D2	3.789E-12	1.425E-27	2.133E-26	2.478E-25	6.463E-24	1.508E-22	4.580E-21	7.751E-20	6.678E-19
U-238+D1	Pb-210+D2	3.789E-12	6.995E-31	2.152E-29	5.337E-28	3.938E-26	2.381E-24	1.707E-22	4.601E-21	4.836E-20
U-238+D1	ΣDSR(j)		5.415E-14	5.397E-14	5.361E-14	5.238E-14	4.902E-14	3.885E-14	2.001E-14	1.961E-15
U-238+D1	U-238+D1	4.189E-08	5.986E-10	5.966E-10	5.927E-10	5.791E-10	5.419E-10	4.295E-10	2.212E-10	2.166E-11
U-238+D1	U-234	4.189E-08	8.565E-17	2.562E-16	5.939E-16	1.741E-15	4.732E-15	1.236E-14	1.902E-14	6.196E-15
U-238+D1	Th-230	4.189E-08	2.153E-21	1.504E-20	7.915E-20	6.972E-19	5.626E-18	5.244E-17	3.087E-16	9.840E-16
U-238+D1	Ra-226+D3	4.189E-08	4.438E-23	6.643E-22	7.715E-21	2.013E-19	4.697E-18	1.426E-16	2.414E-15	2.080E-14
U-238+D1	Pb-210+D	4.189E-08	1.088E-27	3.348E-26	8.300E-25	6.125E-23	3.703E-21	2.655E-19	7.156E-18	7.521E-17
U-238+D1	Po-210	4.189E-08	4.033E-28	2.058E-26	7.626E-25	7.741E-23	5.306E-21	3.991E-19	1.090E-17	1.150E-16
U-238+D1	ΣDSR(j)		5.986E-10	5.966E-10	5.927E-10	5.791E-10	5.419E-10	4.295E-10	2.212E-10	2.169E-11
U-238+D1	U-238+D1	5.530E-14	7.902E-16	7.875E-16	7.823E-16	7.644E-16	7.153E-16	5.670E-16	2.919E-16	2.859E-17
U-238+D1	U-234	5.530E-14	1.131E-22	3.382E-22	7.839E-22	2.298E-21	6.246E-21	1.631E-20	2.511E-20	8.179E-21
U-238+D1	Th-230	5.530E-14	2.841E-27	1.985E-26	1.045E-25	9.204E-25	7.426E-24	6.922E-23	4.074E-22	1.299E-21
U-238+D1	Ra-226+D3	5.530E-14	5.858E-29	8.769E-28	1.018E-26	2.657E-25	6.200E-24	1.883E-22	3.186E-21	2.745E-20
U-238+D1	Pb-210+D1	5.530E-14	1.615E-33	4.969E-32	1.232E-30	9.091E-29	5.496E-27	3.940E-25	1.062E-23	1.116E-22
U-238+D1	ΣDSR(j)		7.902E-16	7.875E-16	7.823E-16	7.644E-16	7.153E-16	5.670E-16	2.920E-16	2.863E-17
U-238+D1	U-238+D1	7.959E-16	1.137E-17	1.134E-17	1.126E-17	1.100E-17	1.030E-17	8.161E-18	4.202E-18	4.115E-19
U-238+D1	U-234	7.959E-16	1.627E-24	4.868E-24	1.128E-23	3.308E-23	8.991E-23	2.348E-22	3.614E-22	1.177E-22
U-238+D1	Th-230	7.959E-16	4.090E-29	2.857E-28	1.504E-27	1.325E-26	1.069E-25	9.964E-25	5.864E-24	1.870E-23
U-238+D1	Ra-226+D3	7.959E-16	8.432E-31	1.262E-29	1.466E-28	3.824E-27	8.924E-26	2.710E-24	4.586E-23	3.951E-22
U-238+D1	Pb-210+D2	7.959E-16	1.469E-34	4.521E-33	1.121E-31	8.272E-30	5.001E-28	3.585E-26	9.664E-25	1.016E-23
U-238+D1	ΣDSR(j)		1.137E-17	1.134E-17	1.126E-17	1.100E-17	1.030E-17	8.161E-18	4.202E-18	4.121E-19

Summary : Recreator (Indoor Worker)

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238+D1	U-238+D1	1.997E-07	2.853E-09	2.844E-09	2.825E-09	2.760E-09	2.583E-09	2.047E-09	1.054E-09	1.032E-10
U-238+D1	U-234	1.997E-07	4.083E-16	1.221E-15	2.831E-15	8.298E-15	2.256E-14	5.891E-14	9.066E-14	2.954E-14
U-238+D1	Th-230	1.997E-07	1.026E-20	7.169E-20	3.773E-19	3.324E-18	2.682E-17	2.500E-16	1.471E-15	4.690E-15
U-238+D1	Ra-226+D4	1.997E-07	6.909E-25	1.034E-23	1.201E-22	3.134E-21	7.312E-20	2.220E-18	3.758E-17	3.238E-16
U-238+D1	Pb-210+D	1.997E-07	5.185E-27	1.596E-25	3.956E-24	2.920E-22	1.765E-20	1.265E-18	3.411E-17	3.585E-16
U-238+D1	Po-210	1.997E-07	1.923E-27	9.808E-26	3.635E-24	3.690E-22	2.529E-20	1.902E-18	5.196E-17	5.483E-16
U-238+D1	ΣDSR(j)		2.853E-09	2.844E-09	2.825E-09	2.760E-09	2.583E-09	2.047E-09	1.054E-09	1.033E-10
U-238+D1	U-238+D1	2.636E-13	3.766E-15	3.754E-15	3.729E-15	3.643E-15	3.409E-15	2.703E-15	1.391E-15	1.363E-16
U-238+D1	U-234	2.636E-13	5.389E-22	1.612E-21	3.737E-21	1.095E-20	2.977E-20	7.776E-20	1.197E-19	3.899E-20
U-238+D1	Th-230	2.636E-13	1.354E-26	9.463E-26	4.980E-25	4.387E-24	3.540E-23	3.300E-22	1.942E-21	6.191E-21
U-238+D1	Ra-226+D4	2.636E-13	9.120E-31	1.365E-29	1.586E-28	4.136E-27	9.652E-26	2.931E-24	4.961E-23	4.274E-22
U-238+D1	Pb-210+D1	2.636E-13	7.696E-33	2.368E-31	5.872E-30	4.333E-28	2.620E-26	1.878E-24	5.063E-23	5.321E-22
U-238+D1	ΣDSR(j)		3.766E-15	3.754E-15	3.729E-15	3.643E-15	3.409E-15	2.703E-15	1.392E-15	1.363E-16
U-238+D1	U-238+D1	3.794E-15	5.421E-17	5.403E-17	5.368E-17	5.244E-17	4.908E-17	3.890E-17	2.003E-17	1.962E-18
U-238+D1	U-234	3.794E-15	7.757E-24	2.320E-23	5.379E-23	1.577E-22	4.286E-22	1.119E-21	1.723E-21	5.612E-22
U-238+D1	Th-230	3.794E-15	1.949E-28	1.362E-27	7.168E-27	6.315E-26	5.095E-25	4.750E-24	2.795E-23	8.912E-23
U-238+D1	Ra-226+D4	3.794E-15	1.313E-32	1.965E-31	2.282E-30	5.954E-29	1.389E-27	4.219E-26	7.140E-25	6.152E-24
U-238+D1	Pb-210+D2	3.794E-15	7.003E-34	2.155E-32	5.343E-31	3.943E-29	2.384E-27	1.709E-25	4.607E-24	4.842E-23
U-238+D1	ΣDSR(j)		5.421E-17	5.403E-17	5.368E-17	5.244E-17	4.908E-17	3.890E-17	2.003E-17	1.962E-18

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Nuclide (i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	7.438E+02	5.782E+02	5.897E+02	7.415E+02	1.431E+03	1.431E+04	1.028E+07	*7.632E+13	
Po-210	1.907E+03	1.207E+04	4.843E+05	1.981E+11	*4.472E+15	*4.472E+15	*4.472E+15	*4.472E+15	
Ra-226	1.313E+01	1.316E+01	1.321E+01	1.342E+01	1.407E+01	1.697E+01	2.972E+01	2.120E+02	
Th-230	9.923E+02	9.609E+02	9.039E+02	7.496E+02	5.090E+02	2.545E+02	1.278E+02	8.197E+01	
U-234	8.280E+03	8.307E+03	8.361E+03	8.552E+03	9.115E+03	1.128E+04	1.850E+04	2.966E+04	
U-238	7.772E+02	7.798E+02	7.850E+02	8.035E+02	8.586E+02	1.083E+03	2.104E+03	2.147E+04	

*At specific activity limit

Summary : Recreator (Indoor Worker)

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Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Pb-210	1.000E+00	1.524 ± 0.003	2.101E-02	5.713E+02	1.613E-02	7.438E+02
Po-210	1.000E+00	0.000E+00	6.294E-03	1.907E+03	6.294E-03	1.907E+03
Ra-226	1.000E+00	0.000E+00	9.139E-01	1.313E+01	9.139E-01	1.313E+01
Th-230	1.000E+00	1.000E+03	1.464E-01	8.197E+01	1.209E-02	9.923E+02
U-234	1.000E+00	0.000E+00	1.449E-03	8.280E+03	1.449E-03	8.280E+03
U-238	1.000E+00	0.000E+00	1.544E-02	7.772E+02	1.544E-02	7.772E+02

Summary : Recreator (Indoor Worker)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	8.790E-03	8.505E-03	7.964E-03	6.326E-03	3.277E-03	3.279E-04	4.564E-07	4.590E-17
Pb-210	Pb-210	1.320E-06	1.305E-08	1.262E-08	1.182E-08	9.390E-09	4.864E-09	4.867E-10	6.774E-13	6.812E-23
Pb-210	Ra-226	9.996E-01	1.378E-04	4.069E-04	9.170E-04	2.437E-03	5.110E-03	6.652E-03	3.988E-03	5.591E-04
Pb-210	Ra-226	2.100E-04	2.894E-08	8.546E-08	1.926E-07	5.120E-07	1.073E-06	1.397E-06	8.376E-07	1.174E-07
Pb-210	Ra-226	1.998E-04	2.753E-08	8.131E-08	1.832E-07	4.871E-07	1.021E-06	1.329E-06	7.969E-07	1.117E-07
Pb-210	Ra-226	4.196E-08	5.783E-12	1.708E-11	3.849E-11	1.023E-10	2.145E-10	2.792E-10	1.674E-10	2.347E-11
Pb-210	Ra-226	2.000E-07	2.757E-11	8.141E-11	1.835E-10	4.877E-10	1.022E-09	1.331E-09	7.979E-10	1.119E-10
Pb-210	Th-230	9.996E-01	1.996E-08	1.383E-07	7.144E-07	5.898E-06	4.006E-05	2.339E-04	6.919E-04	1.212E-03
Pb-210	Th-230	2.100E-04	4.192E-12	2.904E-11	1.501E-10	1.239E-09	8.415E-09	4.914E-08	1.453E-07	2.547E-07
Pb-210	Th-230	1.998E-04	3.988E-12	2.763E-11	1.428E-10	1.179E-09	8.006E-09	4.675E-08	1.383E-07	2.423E-07
Pb-210	Th-230	4.196E-08	8.376E-16	5.804E-15	2.999E-14	2.476E-13	1.682E-12	9.820E-12	2.904E-11	5.089E-11
Pb-210	Th-230	2.000E-07	3.993E-15	2.767E-14	1.429E-13	1.180E-12	8.015E-12	4.681E-11	1.384E-10	2.426E-10
Pb-210	U-234	9.996E-01	4.593E-14	6.832E-13	7.824E-12	1.942E-10	3.964E-09	8.213E-08	7.248E-07	2.856E-06
Pb-210	U-234	2.100E-04	9.647E-18	1.435E-16	1.643E-15	4.080E-14	8.327E-13	1.725E-11	1.522E-10	5.999E-10
Pb-210	U-234	1.998E-04	9.178E-18	1.365E-16	1.564E-15	3.881E-14	7.922E-13	1.641E-11	1.448E-10	5.707E-10
Pb-210	U-234	4.196E-08	1.928E-21	2.868E-20	3.284E-19	8.153E-18	1.664E-16	3.447E-15	3.042E-14	1.199E-13
Pb-210	U-234	2.000E-07	9.189E-21	1.367E-19	1.566E-18	3.886E-17	7.932E-16	1.643E-14	1.450E-13	5.714E-13
Pb-210	U-238	1.599E-03	4.153E-23	1.278E-21	3.169E-20	2.338E-18	1.414E-16	1.014E-14	2.732E-13	2.871E-12
Pb-210	U-238	3.359E-07	8.723E-27	2.684E-25	6.656E-24	4.912E-22	2.969E-20	2.129E-18	5.738E-17	6.031E-16
Pb-210	U-238	3.196E-07	8.300E-27	2.554E-25	6.332E-24	4.673E-22	2.825E-20	2.025E-18	5.459E-17	5.738E-16
Pb-210	U-238	6.713E-11	1.508E-30	5.365E-29	1.330E-27	9.815E-26	5.934E-24	4.254E-22	1.147E-20	1.205E-19
Pb-210	U-238	3.200E-10	7.188E-30	2.557E-28	6.340E-27	4.679E-25	2.829E-23	2.028E-21	5.466E-20	5.745E-19
Pb-210	U-238	9.980E-01	2.592E-20	7.975E-19	1.977E-17	1.459E-15	8.822E-14	6.325E-12	1.705E-10	1.792E-09
Pb-210	U-238	2.096E-04	5.443E-24	1.675E-22	4.153E-21	3.065E-19	1.853E-17	1.328E-15	3.581E-14	3.764E-13
Pb-210	U-238	1.994E-04	5.179E-24	1.594E-22	3.951E-21	2.916E-19	1.763E-17	1.264E-15	3.407E-14	3.581E-13
Pb-210	U-238	4.189E-08	1.088E-27	3.348E-26	8.300E-25	6.125E-23	3.703E-21	2.655E-19	7.156E-18	7.521E-17
Pb-210	U-238	1.997E-07	5.185E-27	1.596E-25	3.956E-24	2.920E-22	1.765E-20	1.265E-18	3.411E-17	3.585E-16
Pb-210	ΣDOSE(j)		8.927E-03	8.912E-03	8.882E-03	8.771E-03	8.429E-03	7.217E-03	4.683E-03	1.775E-03
Po-210	Pb-210	1.000E+00	7.344E-03	1.225E-02	1.238E-02	9.858E-03	5.107E-03	5.109E-04	7.111E-07	7.152E-17
Po-210	Po-210	1.000E+00	6.294E-03	9.939E-04	2.478E-05	6.058E-11	5.610E-27	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	8.683E-05	4.162E-04	1.196E-03	3.569E-03	7.746E-03	1.019E-02	6.113E-03	8.570E-04
Po-210	Ra-226	2.100E-04	1.824E-08	8.742E-08	2.512E-07	7.497E-07	1.627E-06	2.140E-06	1.284E-06	1.800E-07
Po-210	Ra-226	1.998E-04	1.735E-08	8.318E-08	2.390E-07	7.133E-07	1.548E-06	2.036E-06	1.222E-06	1.713E-07
Po-210	Ra-226	4.196E-08	3.645E-12	1.747E-11	5.019E-11	1.498E-10	3.251E-10	4.276E-10	2.566E-10	3.597E-11
Po-210	Ra-226	2.000E-07	1.737E-11	8.328E-11	2.393E-10	7.141E-10	1.550E-09	2.038E-09	1.223E-09	1.715E-10
Po-210	Th-230	9.996E-01	1.016E-08	1.139E-07	8.128E-07	8.189E-06	5.949E-05	3.556E-04	1.057E-03	1.855E-03
Po-210	Th-230	2.100E-04	2.135E-12	2.393E-11	1.707E-10	1.720E-09	1.250E-08	7.470E-08	2.221E-07	3.897E-07
Po-210	Th-230	1.998E-04	2.031E-12	2.277E-11	1.624E-10	1.637E-09	1.189E-08	7.107E-08	2.113E-07	3.708E-07
Po-210	Th-230	4.196E-08	4.266E-16	4.783E-15	3.412E-14	3.437E-13	2.497E-12	1.493E-11	4.439E-11	7.788E-11
Po-210	Th-230	2.000E-07	2.034E-15	2.280E-14	1.626E-13	1.639E-12	1.190E-11	7.116E-11	2.116E-10	3.712E-10
Po-210	U-234	9.996E-01	1.969E-14	4.788E-13	7.941E-12	2.569E-10	5.781E-09	1.241E-07	1.106E-06	4.369E-06
Po-210	U-234	2.100E-04	4.136E-18	1.006E-16	1.668E-15	5.397E-14	1.214E-12	2.608E-11	2.323E-10	9.178E-10
Po-210	U-234	1.998E-04	3.935E-18	9.569E-17	1.587E-15	5.134E-14	1.155E-12	2.481E-11	2.210E-10	8.732E-10
Po-210	U-234	4.196E-08	8.266E-22	2.010E-20	3.333E-19	1.078E-17	2.427E-16	5.211E-15	4.643E-14	1.834E-13
Po-210	U-234	2.000E-07	3.940E-21	9.581E-20	1.589E-18	5.141E-17	1.157E-15	2.484E-14	2.213E-13	8.742E-13
Po-210	U-238	1.599E-03	1.540E-23	7.856E-22	2.911E-20	2.955E-18	2.026E-16	1.524E-14	4.161E-13	4.392E-12
Po-210	U-238	3.359E-07	3.234E-27	1.650E-25	6.115E-24	6.208E-22	4.255E-20	3.200E-18	8.741E-17	9.225E-16
Po-210	U-238	3.196E-07	3.077E-27	1.570E-25	5.818E-24	5.906E-22	4.048E-20	3.045E-18	8.316E-17	8.777E-16

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	0.000E+00	3.202E-29	1.222E-27	1.241E-25	8.503E-24	6.395E-22	1.747E-20	1.843E-19
Po-210	U-238	3.200E-10	2.991E-30	1.571E-28	5.825E-27	5.913E-25	4.053E-23	3.048E-21	8.326E-20	8.787E-19
Po-210	U-238	9.980E-01	9.609E-21	4.902E-19	1.817E-17	1.844E-15	1.264E-13	9.507E-12	2.597E-10	2.741E-09
Po-210	U-238	2.096E-04	2.018E-24	1.030E-22	3.816E-21	3.874E-19	2.655E-17	1.997E-15	5.454E-14	5.756E-13
Po-210	U-238	1.994E-04	1.920E-24	9.796E-23	3.631E-21	3.685E-19	2.526E-17	1.900E-15	5.189E-14	5.477E-13
Po-210	U-238	4.189E-08	4.032E-28	2.058E-26	7.626E-25	7.741E-23	5.306E-21	3.991E-19	1.090E-17	1.150E-16
Po-210	U-238	1.997E-07	1.922E-27	9.808E-26	3.635E-24	3.690E-22	2.529E-20	1.902E-18	5.196E-17	5.483E-16
Po-210	ΣDOSE(j)		1.373E-02	1.366E-02	1.361E-02	1.344E-02	1.291E-02	1.106E-02	7.175E-03	2.718E-03
Pb-210	Pb-210	1.900E-08	1.187E-09	1.149E-09	1.076E-09	8.544E-10	4.426E-10	4.429E-11	6.163E-14	6.199E-24
Pb-210	Ra-226	1.899E-08	1.861E-11	5.495E-11	1.238E-10	3.292E-10	6.901E-10	8.984E-10	5.386E-10	7.551E-11
Pb-210	Ra-226	3.989E-12	3.909E-15	1.154E-14	2.601E-14	6.915E-14	1.450E-13	1.887E-13	1.131E-13	1.586E-14
Pb-210	Ra-226	3.795E-12	3.719E-15	1.098E-14	2.475E-14	6.579E-14	1.379E-13	1.795E-13	1.076E-13	1.509E-14
Pb-210	Ra-226	7.972E-16	7.811E-19	2.307E-18	5.198E-18	1.382E-17	2.897E-17	3.771E-17	2.261E-17	3.170E-18
Pb-210	Ra-226	3.800E-15	3.723E-18	1.099E-17	2.478E-17	6.587E-17	1.381E-16	1.797E-16	1.078E-16	1.511E-17
Pb-210	Th-230	1.899E-08	2.695E-15	1.868E-14	9.649E-14	7.966E-13	5.411E-12	3.159E-11	9.344E-11	1.638E-10
Pb-210	Th-230	3.989E-12	5.661E-19	3.923E-18	2.027E-17	1.673E-16	1.136E-15	6.636E-15	1.963E-14	3.440E-14
Pb-210	Th-230	3.795E-12	5.386E-19	3.732E-18	1.928E-17	1.592E-16	1.081E-15	6.314E-15	1.867E-14	3.272E-14
Pb-210	Th-230	7.972E-16	1.131E-22	7.839E-22	4.050E-21	3.344E-20	2.271E-19	1.326E-18	3.922E-18	6.874E-18
Pb-210	Th-230	3.800E-15	5.393E-22	3.737E-21	1.931E-20	1.594E-19	1.083E-18	6.322E-18	1.870E-17	3.276E-17
Pb-210	U-234	1.899E-08	6.203E-21	9.227E-20	1.057E-18	2.623E-17	5.354E-16	1.109E-14	9.789E-14	3.857E-13
Pb-210	U-234	3.989E-12	1.303E-24	1.938E-23	2.220E-22	5.510E-21	1.125E-19	2.330E-18	2.056E-17	8.102E-17
Pb-210	U-234	3.795E-12	1.240E-24	1.844E-23	2.112E-22	5.242E-21	1.070E-19	2.217E-18	1.956E-17	7.708E-17
Pb-210	U-234	7.972E-16	2.604E-28	3.873E-27	4.436E-26	1.101E-24	2.247E-23	4.656E-22	4.109E-21	1.619E-20
Pb-210	U-234	3.800E-15	1.241E-27	1.846E-26	2.114E-25	5.249E-24	1.071E-22	2.219E-21	1.959E-20	7.717E-20
Pb-210	U-238	3.039E-11	4.882E-30	1.726E-28	4.280E-27	3.158E-25	1.909E-23	1.369E-21	3.690E-20	3.878E-19
Pb-210	U-238	6.383E-15	0.000E+00	0.000E+00	0.000E+00	6.579E-29	4.010E-27	2.875E-25	7.750E-24	8.146E-23
Pb-210	U-238	6.073E-15	0.000E+00	0.000E+00	0.000E+00	6.259E-29	3.816E-27	2.736E-25	7.373E-24	7.750E-23
Pb-210	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.699E-29	1.549E-27	1.628E-26
Pb-210	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.325E-30	2.739E-28	7.382E-27	7.759E-26
Pb-210	U-238	1.896E-08	3.500E-27	1.077E-25	2.670E-24	1.971E-22	1.191E-20	8.542E-19	2.302E-17	2.420E-16
Pb-210	U-238	3.983E-12	0.000E+00	2.244E-29	5.609E-28	4.139E-26	2.503E-24	1.794E-22	4.836E-21	5.083E-20
Pb-210	U-238	3.789E-12	0.000E+00	2.135E-29	5.337E-28	3.938E-26	2.381E-24	1.707E-22	4.601E-21	4.836E-20
Pb-210	U-238	7.959E-16	0.000E+00	0.000E+00	0.000E+00	8.204E-30	5.001E-28	3.585E-26	9.664E-25	1.016E-23
Pb-210	U-238	3.794E-15	0.000E+00	0.000E+00	0.000E+00	3.911E-29	2.384E-27	1.709E-25	4.607E-24	4.842E-23
Pb-210	ΣDOSE(j)		1.206E-09	1.204E-09	1.200E-09	1.185E-09	1.138E-09	9.747E-10	6.325E-10	2.397E-10
Ra-226	Ra-226	9.996E-01	9.131E-01	9.105E-01	9.054E-01	8.878E-01	8.393E-01	6.896E-01	3.934E-01	5.514E-02
Ra-226	Ra-226	1.319E-06	1.205E-06	1.202E-06	1.195E-06	1.172E-06	1.108E-06	9.103E-07	5.192E-07	7.278E-08
Ra-226	Th-230	9.996E-01	1.979E-04	5.929E-04	1.380E-03	4.098E-03	1.158E-02	3.466E-02	8.024E-02	1.315E-01
Ra-226	Th-230	1.319E-06	2.612E-10	7.826E-10	1.821E-09	5.410E-09	1.528E-08	4.576E-08	1.059E-07	1.736E-07
Ra-226	Th-230	1.899E-08	3.759E-12	1.126E-11	2.621E-11	7.786E-11	2.200E-10	6.586E-10	1.525E-09	2.498E-09
Ra-226	U-234	9.996E-01	6.061E-10	4.235E-09	2.230E-08	1.967E-07	1.592E-06	1.501E-05	9.112E-05	3.134E-04
Ra-226	U-234	1.319E-06	8.001E-16	5.591E-15	2.943E-14	2.596E-13	2.102E-12	1.982E-11	1.203E-10	4.137E-10
Ra-226	U-234	1.899E-08	1.152E-17	8.047E-17	4.237E-16	3.737E-15	3.025E-14	2.853E-13	1.731E-12	5.954E-12
Ra-226	U-238	1.599E-03	6.843E-19	1.024E-17	1.190E-16	3.104E-15	7.242E-14	2.199E-12	3.722E-11	3.207E-10
Ra-226	U-238	2.111E-09	9.033E-25	1.352E-23	1.570E-22	4.097E-21	9.560E-20	2.903E-18	4.913E-17	4.233E-16
Ra-226	U-238	3.039E-11	1.300E-26	1.946E-25	2.260E-24	5.897E-23	1.376E-21	4.178E-20	7.072E-19	6.093E-18
Ra-226	U-238	9.980E-01	4.270E-16	6.392E-15	7.424E-14	1.937E-12	4.519E-11	1.372E-09	2.323E-08	2.001E-07

Summary : Recreator (Indoor Worker)

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	5.636E-22	8.438E-21	9.799E-20	2.556E-18	5.965E-17	1.811E-15	3.066E-14	2.641E-13
Ra-226	U-238	1.896E-08	8.113E-24	1.214E-22	1.411E-21	3.680E-20	8.587E-19	2.607E-17	4.413E-16	3.802E-15
Ra-226	ΣDOSE(j)		9.133E-01	9.111E-01	9.068E-01	8.919E-01	8.509E-01	7.243E-01	4.737E-01	1.869E-01
Pb-210	Ra-226	1.319E-06	2.045E-10	6.039E-10	1.361E-09	3.618E-09	7.584E-09	9.873E-09	5.919E-09	8.298E-10
Pb-210	Ra-226	2.771E-10	4.296E-14	1.268E-13	2.859E-13	7.599E-13	1.593E-12	2.074E-12	1.243E-12	1.743E-13
Pb-210	Ra-226	2.637E-10	4.087E-14	1.207E-13	2.720E-13	7.230E-13	1.516E-12	1.973E-12	1.183E-12	1.658E-13
Pb-210	Ra-226	5.538E-14	8.584E-18	2.535E-17	5.713E-17	1.519E-16	3.183E-16	4.144E-16	2.485E-16	3.483E-17
Pb-210	Ra-226	2.640E-13	4.092E-17	1.208E-16	2.723E-16	7.239E-16	1.517E-15	1.975E-15	1.184E-15	1.660E-16
Pb-210	Th-230	1.319E-06	2.962E-14	2.052E-13	1.060E-12	8.755E-12	5.946E-11	3.472E-10	1.027E-09	1.800E-09
Pb-210	Th-230	2.771E-10	6.221E-18	4.311E-17	2.227E-16	1.839E-15	1.249E-14	7.293E-14	2.157E-13	3.780E-13
Pb-210	Th-230	2.637E-10	5.919E-18	4.102E-17	2.119E-16	1.749E-15	1.188E-14	6.939E-14	2.052E-13	3.596E-13
Pb-210	Th-230	5.538E-14	1.243E-21	8.615E-21	4.451E-20	3.675E-19	2.496E-18	1.457E-17	4.311E-17	7.554E-17
Pb-210	Th-230	2.640E-13	5.926E-21	4.107E-20	2.122E-19	1.752E-18	1.190E-17	6.947E-17	2.055E-16	3.601E-16
Pb-210	U-234	1.319E-06	6.817E-20	1.014E-18	1.161E-17	2.883E-16	5.884E-15	1.219E-13	1.076E-12	4.239E-12
Pb-210	U-234	2.771E-10	1.432E-23	2.130E-22	2.439E-21	6.055E-20	1.236E-18	2.560E-17	2.260E-16	8.904E-16
Pb-210	U-234	2.637E-10	1.362E-23	2.026E-22	2.321E-21	5.761E-20	1.176E-18	2.436E-17	2.150E-16	8.471E-16
Pb-210	U-234	5.538E-14	2.861E-27	4.257E-26	4.875E-25	1.210E-23	2.470E-22	5.117E-21	4.516E-20	1.779E-19
Pb-210	U-234	2.640E-13	1.364E-26	2.029E-25	2.324E-24	5.768E-23	1.177E-21	2.439E-20	2.153E-19	8.481E-19
Pb-210	U-238	2.111E-09	6.164E-29	1.897E-27	4.703E-26	3.471E-24	2.098E-22	1.504E-20	4.055E-19	4.262E-18
Pb-210	U-238	4.434E-13	0.000E+00	0.000E+00	9.354E-30	7.290E-28	4.407E-26	3.160E-24	8.517E-23	8.952E-22
Pb-210	U-238	4.219E-13	0.000E+00	0.000E+00	8.899E-30	6.936E-28	4.193E-26	3.006E-24	8.103E-23	8.517E-22
Pb-210	U-238	8.862E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.340E-30	6.315E-28	1.702E-26	1.789E-25
Pb-210	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.198E-29	3.010E-27	8.113E-26	8.527E-25
Pb-210	U-238	1.317E-06	3.847E-26	1.184E-24	2.935E-23	2.166E-21	1.309E-19	9.387E-18	2.530E-16	2.659E-15
Pb-210	U-238	2.767E-10	7.650E-30	2.486E-28	6.164E-27	4.549E-25	2.750E-23	1.972E-21	5.315E-20	5.586E-19
Pb-210	U-238	2.633E-10	7.278E-30	2.366E-28	5.865E-27	4.328E-25	2.617E-23	1.876E-21	5.056E-20	5.315E-19
Pb-210	U-238	5.530E-14	0.000E+00	0.000E+00	0.000E+00	9.091E-29	5.496E-27	3.940E-25	1.062E-23	1.116E-22
Pb-210	U-238	2.636E-13	0.000E+00	0.000E+00	5.560E-30	4.333E-28	2.620E-26	1.878E-24	5.063E-23	5.321E-22
Pb-210	ΣDOSE(j)		2.046E-10	6.044E-10	1.363E-09	3.628E-09	7.647E-09	1.022E-08	6.950E-09	2.635E-09
Ra-226	Ra-226	1.899E-08	1.735E-08	1.730E-08	1.720E-08	1.687E-08	1.595E-08	1.310E-08	7.474E-09	1.048E-09
Ra-226	Ra-226	2.100E-04	4.981E-04	4.967E-04	4.939E-04	4.843E-04	4.578E-04	3.762E-04	2.146E-04	3.008E-05
Ra-226	ΣDOSE(j)		4.981E-04	4.967E-04	4.939E-04	4.843E-04	4.579E-04	3.762E-04	2.146E-04	3.008E-05
Ra-226	Ra-226	2.771E-10	6.574E-10	6.556E-10	6.519E-10	6.392E-10	6.043E-10	4.965E-10	2.832E-10	3.970E-11
Ra-226	Ra-226	3.989E-12	9.463E-12	9.437E-12	9.384E-12	9.201E-12	8.699E-12	7.147E-12	4.077E-12	5.715E-13
Ra-226	ΣDOSE(j)		6.669E-10	6.650E-10	6.613E-10	6.484E-10	6.130E-10	5.037E-10	2.873E-10	4.027E-11
Ra-226	Ra-226	1.998E-04	1.604E-04	1.599E-04	1.590E-04	1.559E-04	1.474E-04	1.211E-04	6.909E-05	9.685E-06
Ra-226	Ra-226	2.637E-10	2.117E-10	2.111E-10	2.099E-10	2.058E-10	1.946E-10	1.599E-10	9.120E-11	1.278E-11
Ra-226	Th-230	1.998E-04	3.476E-08	1.041E-07	2.423E-07	7.198E-07	2.033E-06	6.089E-06	1.409E-05	2.310E-05
Ra-226	Th-230	2.637E-10	4.588E-14	1.375E-13	3.199E-13	9.502E-13	2.684E-12	8.037E-12	1.860E-11	3.049E-11
Ra-226	Th-230	3.795E-12	6.604E-16	1.979E-15	4.604E-15	1.368E-14	3.863E-14	1.157E-13	2.678E-13	4.388E-13
Ra-226	U-234	1.998E-04	1.065E-13	7.440E-13	3.917E-12	3.454E-11	2.797E-10	2.637E-09	1.601E-08	5.505E-08
Ra-226	U-234	2.637E-10	1.405E-19	9.820E-19	5.170E-18	4.560E-17	3.691E-16	3.481E-15	2.113E-14	7.266E-14
Ra-226	U-234	3.795E-12	2.023E-21	1.414E-20	7.442E-20	6.563E-19	5.313E-18	5.011E-17	3.041E-16	1.046E-15
Ra-226	U-238	3.196E-07	1.202E-22	1.799E-21	2.090E-20	5.452E-19	1.272E-17	3.863E-16	6.538E-15	5.633E-14
Ra-226	U-238	4.219E-13	1.579E-28	2.375E-27	2.758E-26	7.196E-25	1.679E-23	5.099E-22	8.630E-21	7.435E-20

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	2.272E-30	3.402E-29	3.966E-28	1.036E-26	2.417E-25	7.339E-24	1.242E-22	1.070E-21
Ra-226	U-238	1.994E-04	7.500E-20	1.123E-18	1.304E-17	3.402E-16	7.938E-15	2.410E-13	4.080E-12	3.515E-11
Ra-226	U-238	2.633E-10	9.900E-26	1.482E-24	1.721E-23	4.490E-22	1.048E-20	3.182E-19	5.385E-18	4.639E-17
Ra-226	U-238	3.789E-12	1.425E-27	2.133E-26	2.478E-25	6.463E-24	1.508E-22	4.580E-21	7.751E-20	6.678E-19
Ra-226	ΣDOSE (j)		1.604E-04	1.600E-04	1.593E-04	1.567E-04	1.495E-04	1.272E-04	8.320E-05	3.284E-05
Ra-226	Ra-226	3.795E-12	3.047E-12	3.039E-12	3.022E-12	2.963E-12	2.801E-12	2.301E-12	1.313E-12	1.840E-13
Ra-226	Ra-226	4.196E-08	9.489E-08	9.463E-08	9.410E-08	9.227E-08	8.723E-08	7.167E-08	4.088E-08	5.730E-09
Ra-226	ΣDOSE (j)		9.490E-08	9.463E-08	9.410E-08	9.227E-08	8.723E-08	7.167E-08	4.088E-08	5.731E-09
Ra-226	Ra-226	5.538E-14	1.253E-13	1.249E-13	1.242E-13	1.218E-13	1.151E-13	9.460E-14	5.396E-14	7.564E-15
Ra-226	Ra-226	7.972E-16	1.803E-15	1.798E-15	1.788E-15	1.753E-15	1.657E-15	1.362E-15	7.767E-16	1.089E-16
Ra-226	ΣDOSE (j)		1.271E-13	1.267E-13	1.260E-13	1.235E-13	1.168E-13	9.596E-14	5.474E-14	7.673E-15
Ra-226	Ra-226	2.000E-07	1.477E-09	1.473E-09	1.465E-09	1.436E-09	1.358E-09	1.116E-09	6.365E-10	8.922E-11
Ra-226	Ra-226	2.640E-13	1.950E-15	1.945E-15	1.934E-15	1.896E-15	1.793E-15	1.473E-15	8.401E-16	1.178E-16
Ra-226	Th-230	2.000E-07	3.202E-13	9.593E-13	2.232E-12	6.631E-12	1.873E-11	5.609E-11	1.298E-10	2.127E-10
Ra-226	Th-230	2.640E-13	4.226E-19	1.266E-18	2.946E-18	8.753E-18	2.472E-17	7.404E-17	1.714E-16	2.808E-16
Ra-226	Th-230	3.800E-15	6.083E-21	1.823E-20	4.241E-20	1.260E-19	3.559E-19	1.066E-18	2.467E-18	4.042E-18
Ra-226	U-234	2.000E-07	9.807E-19	6.853E-18	3.608E-17	3.182E-16	2.576E-15	2.429E-14	1.474E-13	5.071E-13
Ra-226	U-234	2.640E-13	1.295E-24	9.046E-24	4.763E-23	4.200E-22	3.400E-21	3.207E-20	1.946E-19	6.694E-19
Ra-226	U-234	3.800E-15	1.863E-26	1.302E-25	6.855E-25	6.046E-24	4.895E-23	4.616E-22	2.801E-21	9.635E-21
Ra-226	U-238	3.200E-10	1.107E-27	1.657E-26	1.925E-25	5.022E-24	1.172E-22	3.558E-21	6.022E-20	5.189E-19
Ra-226	U-238	4.224E-16	0.000E+00	0.000E+00	0.000E+00	5.838E-30	1.547E-28	4.697E-27	7.950E-26	6.849E-25
Ra-226	U-238	6.080E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.025E-30	6.761E-29	1.144E-27	9.858E-27
Ra-226	U-238	1.997E-07	6.909E-25	1.034E-23	1.201E-22	3.134E-21	7.312E-20	2.220E-18	3.758E-17	3.238E-16
Ra-226	U-238	2.636E-13	0.000E+00	1.365E-29	1.586E-28	4.136E-27	9.652E-26	2.931E-24	4.961E-23	4.274E-22
Ra-226	U-238	3.794E-15	0.000E+00	0.000E+00	1.050E-30	5.954E-29	1.389E-27	4.219E-26	7.140E-25	6.152E-24
Ra-226	ΣDOSE (j)		1.478E-09	1.474E-09	1.467E-09	1.443E-09	1.377E-09	1.172E-09	7.664E-10	3.025E-10
Ra-226	Ra-226	3.800E-15	2.807E-17	2.799E-17	2.783E-17	2.729E-17	2.580E-17	2.120E-17	1.209E-17	1.695E-18
Th-230	Th-230	9.996E-01	1.189E-02	1.189E-02	1.189E-02	1.189E-02	1.189E-02	1.188E-02	1.185E-02	1.175E-02
Th-230	Th-230	1.319E-06	1.569E-08	1.569E-08	1.569E-08	1.569E-08	1.569E-08	1.568E-08	1.564E-08	1.551E-08
Th-230	U-234	9.996E-01	5.461E-08	1.636E-07	3.804E-07	1.128E-06	3.171E-06	9.336E-06	2.074E-05	3.145E-05
Th-230	U-234	1.319E-06	7.208E-14	2.159E-13	5.022E-13	1.489E-12	4.185E-12	1.232E-11	2.738E-11	4.151E-11
Th-230	U-234	1.899E-08	1.038E-15	3.108E-15	7.228E-15	2.143E-14	6.024E-14	1.774E-13	3.941E-13	5.975E-13
Th-230	U-234	2.100E-04	1.147E-11	3.436E-11	7.991E-11	2.370E-10	6.660E-10	1.961E-09	4.356E-09	6.605E-09
Th-230	U-234	2.771E-10	1.514E-17	4.535E-17	1.055E-16	3.128E-16	8.791E-16	2.588E-15	5.750E-15	8.719E-15
Th-230	U-234	3.989E-12	2.179E-19	6.528E-19	1.518E-18	4.502E-18	1.265E-17	3.726E-17	8.277E-17	1.255E-16
Th-230	U-234	1.998E-04	1.091E-11	3.269E-11	7.602E-11	2.254E-10	6.336E-10	1.866E-09	4.145E-09	6.285E-09
Th-230	U-234	2.637E-10	1.440E-17	4.315E-17	1.004E-16	2.976E-16	8.364E-16	2.463E-15	5.471E-15	8.296E-15
Th-230	U-234	3.795E-12	2.073E-19	6.211E-19	1.444E-18	4.283E-18	1.204E-17	3.545E-17	7.875E-17	1.194E-16
Th-230	U-234	4.196E-08	2.292E-15	6.866E-15	1.597E-14	4.735E-14	1.331E-13	3.919E-13	8.706E-13	1.320E-12
Th-230	U-234	5.538E-14	3.026E-21	9.063E-21	2.108E-20	6.251E-20	1.757E-19	5.173E-19	1.149E-18	1.742E-18
Th-230	U-234	7.972E-16	4.355E-23	1.305E-22	3.034E-22	8.997E-22	2.529E-21	7.446E-21	1.654E-20	2.508E-20
Th-230	U-234	2.000E-07	1.093E-14	3.273E-14	7.612E-14	2.257E-13	6.344E-13	1.868E-12	4.150E-12	6.292E-12
Th-230	U-234	2.640E-13	1.442E-20	4.320E-20	1.005E-19	2.979E-19	8.374E-19	2.466E-18	5.478E-18	8.306E-18
Th-230	U-234	3.800E-15	2.076E-22	6.218E-22	1.446E-21	4.289E-21	1.205E-20	3.549E-20	7.884E-20	1.196E-19

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	8.218E-17	5.742E-16	3.022E-15	2.662E-14	2.148E-13	2.002E-12	1.178E-11	3.757E-11
Th-230	U-238	2.111E-09	1.085E-22	7.579E-22	3.989E-21	3.514E-20	2.835E-19	2.643E-18	1.556E-17	4.959E-17
Th-230	U-238	3.039E-11	1.561E-24	1.091E-23	5.742E-23	5.058E-22	4.081E-21	3.804E-20	2.239E-19	7.138E-19
Th-230	U-238	3.359E-07	1.726E-20	1.206E-19	6.347E-19	5.591E-18	4.511E-17	4.206E-16	2.475E-15	7.891E-15
Th-230	U-238	4.434E-13	2.279E-26	1.592E-25	8.378E-25	7.381E-24	5.955E-23	5.551E-22	3.267E-21	1.042E-20
Th-230	U-238	6.383E-15	3.280E-28	2.291E-27	1.206E-26	1.062E-25	8.572E-25	7.990E-24	4.703E-23	1.499E-22
Th-230	U-238	3.196E-07	1.642E-20	1.147E-19	6.039E-19	5.320E-18	4.292E-17	4.001E-16	2.355E-15	7.507E-15
Th-230	U-238	4.219E-13	2.168E-26	1.515E-25	7.971E-25	7.022E-24	5.666E-23	5.282E-22	3.109E-21	9.910E-21
Th-230	U-238	6.073E-15	3.120E-28	2.180E-27	1.147E-26	1.011E-25	8.155E-25	7.602E-24	4.474E-23	1.426E-22
Th-230	U-238	6.713E-11	3.450E-24	2.410E-23	1.268E-22	1.117E-21	9.015E-21	8.404E-20	4.946E-19	1.577E-18
Th-230	U-238	8.862E-17	3.609E-30	3.155E-29	1.674E-28	1.475E-27	1.190E-26	1.109E-25	6.529E-25	2.081E-24
Th-230	U-238	1.276E-18	0.000E+00	0.000E+00	1.910E-30	2.105E-29	1.713E-28	1.597E-27	9.398E-27	2.996E-26
Th-230	U-238	3.200E-10	1.644E-23	1.149E-22	6.046E-22	5.326E-21	4.297E-20	4.006E-19	2.358E-18	7.516E-18
Th-230	U-238	4.224E-16	2.152E-29	1.516E-28	7.981E-28	7.031E-27	5.673E-26	5.288E-25	3.112E-24	9.922E-24
Th-230	U-238	6.080E-18	0.000E+00	1.730E-30	1.139E-29	1.004E-28	8.165E-28	7.611E-27	4.480E-26	1.428E-25
Th-230	U-238	9.980E-01	5.128E-14	3.583E-13	1.886E-12	1.661E-11	1.340E-10	1.249E-09	7.353E-09	2.344E-08
Th-230	U-238	1.317E-06	6.769E-20	4.729E-19	2.489E-18	2.193E-17	1.769E-16	1.649E-15	9.706E-15	3.094E-14
Th-230	U-238	1.896E-08	9.743E-22	6.807E-21	3.583E-20	3.156E-19	2.546E-18	2.374E-17	1.397E-16	4.454E-16
Th-230	U-238	2.096E-04	1.077E-17	7.526E-17	3.961E-16	3.489E-15	2.815E-14	2.624E-13	1.545E-12	4.924E-12
Th-230	U-238	2.767E-10	1.422E-23	9.934E-23	5.228E-22	4.606E-21	3.716E-20	3.464E-19	2.039E-18	6.499E-18
Th-230	U-238	3.983E-12	2.047E-25	1.430E-24	7.525E-24	6.629E-23	5.349E-22	4.986E-21	2.935E-20	9.355E-20
Th-230	U-238	1.994E-04	1.025E-17	7.160E-17	3.768E-16	3.320E-15	2.678E-14	2.497E-13	1.469E-12	4.685E-12
Th-230	U-238	2.633E-10	1.353E-23	9.451E-23	4.974E-22	4.382E-21	3.535E-20	3.296E-19	1.940E-18	6.184E-18
Th-230	U-238	3.789E-12	1.947E-25	1.360E-24	7.160E-24	6.307E-23	5.089E-22	4.744E-21	2.792E-20	8.901E-20
Th-230	U-238	4.189E-08	2.153E-21	1.504E-20	7.915E-20	6.972E-19	5.626E-18	5.244E-17	3.087E-16	9.840E-16
Th-230	U-238	5.530E-14	2.841E-27	1.985E-26	1.045E-25	9.204E-25	7.426E-24	6.922E-23	4.074E-22	1.299E-21
Th-230	U-238	7.959E-16	4.056E-29	2.857E-28	1.504E-27	1.325E-26	1.069E-25	9.964E-25	5.864E-24	1.870E-23
Th-230	U-238	1.997E-07	1.026E-20	7.169E-20	3.773E-19	3.324E-18	2.682E-17	2.500E-16	1.471E-15	4.690E-15
Th-230	U-238	2.636E-13	1.354E-26	9.463E-26	4.980E-25	4.387E-24	3.540E-23	3.300E-22	1.942E-21	6.191E-21
Th-230	U-238	3.794E-15	1.949E-28	1.362E-27	7.168E-27	6.315E-26	5.095E-25	4.750E-24	2.795E-23	8.912E-23
Th-230	ΣDOSE(j)		1.189E-02	1.189E-02	1.189E-02	1.189E-02	1.189E-02	1.189E-02	1.187E-02	1.178E-02
Th-230	Th-230	1.899E-08	2.259E-10	2.259E-10	2.259E-10	2.259E-10	2.258E-10	2.256E-10	2.251E-10	2.232E-10
Th-230	Th-230	2.100E-04	2.497E-06	2.497E-06	2.497E-06	2.497E-06	2.497E-06	2.494E-06	2.488E-06	2.468E-06
Th-230	ΣDOSE(j)		2.498E-06	2.498E-06	2.498E-06	2.497E-06	2.497E-06	2.495E-06	2.489E-06	2.468E-06
Ra-226	Th-230	2.100E-04	1.079E-07	3.234E-07	7.525E-07	2.235E-06	6.315E-06	1.891E-05	4.377E-05	7.172E-05
Ra-226	Th-230	3.989E-12	2.051E-15	6.145E-15	1.430E-14	4.247E-14	1.200E-13	3.593E-13	8.317E-13	1.363E-12
Ra-226	U-234	2.100E-04	3.306E-13	2.310E-12	1.216E-11	1.073E-10	8.685E-10	8.190E-09	4.971E-08	1.710E-07
Ra-226	U-234	2.771E-10	4.364E-19	3.050E-18	1.606E-17	1.416E-16	1.146E-15	1.081E-14	6.561E-14	2.257E-13
Ra-226	U-234	3.989E-12	6.282E-21	4.390E-20	2.311E-19	2.038E-18	1.650E-17	1.556E-16	9.444E-16	3.248E-15
Ra-226	U-238	3.359E-07	3.733E-22	5.588E-21	6.490E-20	1.693E-18	3.951E-17	1.200E-15	2.030E-14	1.749E-13
Ra-226	U-238	4.434E-13	4.919E-28	7.376E-27	8.566E-26	2.235E-24	5.215E-23	1.583E-21	2.680E-20	2.309E-19
Ra-226	U-238	6.383E-15	7.080E-30	1.060E-28	1.233E-27	3.217E-26	7.506E-25	2.279E-23	3.858E-22	3.324E-21
Ra-226	U-238	2.096E-04	2.329E-19	3.487E-18	4.050E-17	1.056E-15	2.465E-14	7.485E-13	1.267E-11	1.092E-10
Ra-226	U-238	2.767E-10	3.075E-25	4.603E-24	5.345E-23	1.394E-21	3.254E-20	9.881E-19	1.672E-17	1.441E-16
Ra-226	U-238	3.983E-12	4.426E-27	6.625E-26	7.694E-25	2.007E-23	4.684E-22	1.422E-20	2.407E-19	2.074E-18
Ra-226	ΣDOSE(j)		1.079E-07	3.234E-07	7.525E-07	2.236E-06	6.316E-06	1.892E-05	4.382E-05	7.189E-05

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	3.297E-12	3.297E-12	3.296E-12	3.296E-12	3.295E-12	3.293E-12	3.285E-12	3.257E-12
Th-230	Th-230	3.989E-12	4.745E-14	4.745E-14	4.745E-14	4.745E-14	4.743E-14	4.739E-14	4.728E-14	4.689E-14
Th-230	ΣDOSE(j)		3.344E-12	3.344E-12	3.344E-12	3.344E-12	3.343E-12	3.340E-12	3.332E-12	3.304E-12
Ra-226	Th-230	2.771E-10	1.425E-13	4.269E-13	9.933E-13	2.951E-12	8.335E-12	2.496E-11	5.778E-11	9.467E-11
Th-230	Th-230	1.998E-04	2.376E-06	2.376E-06	2.376E-06	2.376E-06	2.375E-06	2.373E-06	2.368E-06	2.348E-06
Th-230	Th-230	2.637E-10	3.136E-12	3.136E-12	3.136E-12	3.136E-12	3.135E-12	3.133E-12	3.125E-12	3.099E-12
Th-230	ΣDOSE(j)		2.376E-06	2.376E-06	2.376E-06	2.376E-06	2.375E-06	2.373E-06	2.368E-06	2.348E-06
Th-230	Th-230	3.795E-12	4.515E-14	4.515E-14	4.514E-14	4.514E-14	4.513E-14	4.509E-14	4.498E-14	4.461E-14
Th-230	Th-230	4.196E-08	4.991E-10	4.991E-10	4.991E-10	4.990E-10	4.989E-10	4.985E-10	4.973E-10	4.931E-10
Th-230	ΣDOSE(j)		4.991E-10	4.991E-10	4.991E-10	4.991E-10	4.989E-10	4.985E-10	4.973E-10	4.932E-10
Ra-226	Th-230	4.196E-08	2.056E-11	6.162E-11	1.434E-10	4.259E-10	1.203E-09	3.603E-09	8.340E-09	1.367E-08
Ra-226	Th-230	7.972E-16	3.907E-19	1.171E-18	2.724E-18	8.092E-18	2.286E-17	6.845E-17	1.585E-16	2.596E-16
Ra-226	U-234	4.196E-08	6.299E-17	4.402E-16	2.317E-15	2.044E-14	1.655E-13	1.560E-12	9.470E-12	3.257E-11
Ra-226	U-234	5.538E-14	8.315E-23	5.810E-22	3.059E-21	2.698E-20	2.184E-19	2.060E-18	1.250E-17	4.299E-17
Ra-226	U-234	7.972E-16	1.197E-24	8.364E-24	4.403E-23	3.883E-22	3.144E-21	2.965E-20	1.799E-19	6.188E-19
Ra-226	U-238	6.713E-11	7.112E-26	1.065E-24	1.236E-23	3.226E-22	7.527E-21	2.286E-19	3.868E-18	3.333E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.403E-30	1.629E-29	4.250E-28	9.936E-27	3.017E-25	5.106E-24	4.399E-23
Ra-226	U-238	1.276E-18	0.000E+00	0.000E+00	0.000E+00	6.118E-30	1.428E-28	4.342E-27	7.350E-26	6.332E-25
Ra-226	U-238	4.189E-08	4.438E-23	6.643E-22	7.715E-21	2.013E-19	4.697E-18	1.426E-16	2.414E-15	2.080E-14
Ra-226	U-238	5.530E-14	5.848E-29	8.766E-28	1.018E-26	2.657E-25	6.200E-24	1.883E-22	3.186E-21	2.745E-20
Ra-226	U-238	7.959E-16	0.000E+00	1.260E-29	1.463E-28	3.824E-27	8.924E-26	2.710E-24	4.586E-23	3.951E-22
Ra-226	ΣDOSE(j)		2.056E-11	6.162E-11	1.434E-10	4.259E-10	1.203E-09	3.604E-09	8.349E-09	1.370E-08
Th-230	Th-230	5.538E-14	6.588E-16	6.588E-16	6.588E-16	6.587E-16	6.586E-16	6.580E-16	6.564E-16	6.509E-16
Th-230	Th-230	7.972E-16	9.483E-18	9.482E-18	9.482E-18	9.481E-18	9.479E-18	9.471E-18	9.449E-18	9.370E-18
Th-230	ΣDOSE(j)		6.683E-16	6.683E-16	6.682E-16	6.682E-16	6.680E-16	6.675E-16	6.659E-16	6.603E-16
Ra-226	Th-230	5.538E-14	2.714E-17	8.133E-17	1.892E-16	5.622E-16	1.588E-15	4.756E-15	1.101E-14	1.804E-14
Th-230	Th-230	2.000E-07	2.379E-09	2.379E-09	2.379E-09	2.379E-09	2.378E-09	2.376E-09	2.370E-09	2.351E-09
Th-230	Th-230	2.640E-13	3.140E-15	3.140E-15	3.140E-15	3.140E-15	3.139E-15	3.136E-15	3.129E-15	3.103E-15
Th-230	ΣDOSE(j)		2.379E-09	2.379E-09	2.379E-09	2.379E-09	2.378E-09	2.376E-09	2.370E-09	2.351E-09
Th-230	Th-230	3.800E-15	4.520E-17	4.520E-17	4.520E-17	4.519E-17	4.518E-17	4.515E-17	4.504E-17	4.466E-17
U-234	U-234	9.996E-01	1.449E-03	1.444E-03	1.434E-03	1.401E-03	1.311E-03	1.039E-03	5.347E-04	5.227E-05
U-234	U-234	1.319E-06	1.912E-09	1.906E-09	1.893E-09	1.850E-09	1.731E-09	1.372E-09	7.058E-10	6.899E-11
U-234	U-238	1.599E-03	3.270E-12	9.781E-12	2.267E-11	6.646E-11	1.807E-10	4.718E-10	7.262E-10	2.366E-10
U-234	U-238	2.111E-09	4.316E-18	1.291E-17	2.993E-17	8.773E-17	2.385E-16	6.228E-16	9.585E-16	3.123E-16
U-234	U-238	3.039E-11	6.213E-20	1.858E-19	4.308E-19	1.263E-18	3.433E-18	8.965E-18	1.380E-17	4.495E-18
U-234	U-238	3.359E-07	6.869E-16	2.054E-15	4.763E-15	1.396E-14	3.795E-14	9.910E-14	1.525E-13	4.969E-14
U-234	U-238	4.434E-13	9.066E-22	2.712E-21	6.287E-21	1.843E-20	5.009E-20	1.308E-19	2.013E-19	6.559E-20
U-234	U-238	6.383E-15	1.305E-23	3.904E-23	9.049E-23	2.652E-22	7.210E-22	1.883E-21	2.898E-21	9.441E-22
U-234	U-238	3.196E-07	6.535E-16	1.955E-15	4.531E-15	1.328E-14	3.610E-14	9.429E-14	1.451E-13	4.727E-14
U-234	U-238	4.219E-13	8.626E-22	2.580E-21	5.981E-21	1.753E-20	4.766E-20	1.245E-19	1.916E-19	6.240E-20

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	1.242E-23	3.714E-23	8.609E-23	2.524E-22	6.860E-22	1.791E-21	2.757E-21	8.982E-22
U-234	U-238	6.713E-11	1.373E-19	4.106E-19	9.518E-19	2.790E-18	7.583E-18	1.980E-17	3.048E-17	9.930E-18
U-234	U-238	8.862E-17	1.812E-25	5.420E-25	1.256E-24	3.683E-24	1.001E-23	2.614E-23	4.024E-23	1.311E-23
U-234	U-238	1.276E-18	2.608E-27	7.801E-27	1.808E-26	5.301E-26	1.441E-25	3.763E-25	5.791E-25	1.887E-25
U-234	U-238	3.200E-10	6.543E-19	1.957E-18	4.537E-18	1.330E-17	3.615E-17	9.440E-17	1.453E-16	4.733E-17
U-234	U-238	4.224E-16	8.636E-25	2.583E-24	5.988E-24	1.755E-23	4.771E-23	1.246E-22	1.918E-22	6.248E-23
U-234	U-238	6.080E-18	1.243E-26	3.718E-26	8.620E-26	2.527E-25	6.868E-25	1.794E-24	2.761E-24	8.993E-25
U-234	U-238	9.980E-01	2.041E-09	6.103E-09	1.415E-08	4.147E-08	1.127E-07	2.944E-07	4.531E-07	1.476E-07
U-234	U-238	1.317E-06	2.693E-15	8.057E-15	1.868E-14	5.474E-14	1.488E-13	3.886E-13	5.981E-13	1.949E-13
U-234	U-238	1.896E-08	3.877E-17	1.160E-16	2.688E-16	7.880E-16	2.142E-15	5.594E-15	8.610E-15	2.805E-15
U-234	U-238	2.096E-04	4.286E-13	1.282E-12	2.972E-12	8.711E-12	2.368E-11	6.184E-11	9.518E-11	3.101E-11
U-234	U-238	2.767E-10	5.657E-19	1.692E-18	3.923E-18	1.150E-17	3.126E-17	8.163E-17	1.256E-16	4.093E-17
U-234	U-238	3.983E-12	8.143E-21	2.436E-20	5.647E-20	1.655E-19	4.499E-19	1.175E-18	1.808E-18	5.891E-19
U-234	U-238	1.994E-04	4.078E-13	1.220E-12	2.827E-12	8.288E-12	2.253E-11	5.884E-11	9.055E-11	2.950E-11
U-234	U-238	2.633E-10	5.383E-19	1.610E-18	3.732E-18	1.094E-17	2.974E-17	7.766E-17	1.195E-16	3.894E-17
U-234	U-238	3.789E-12	7.748E-21	2.317E-20	5.372E-20	1.575E-19	4.280E-19	1.118E-18	1.721E-18	5.605E-19
U-234	U-238	4.189E-08	8.565E-17	2.562E-16	5.939E-16	1.741E-15	4.732E-15	1.236E-14	1.902E-14	6.196E-15
U-234	U-238	5.530E-14	1.131E-22	3.382E-22	7.839E-22	2.298E-21	6.246E-21	1.631E-20	2.511E-20	8.179E-21
U-234	U-238	7.959E-16	1.627E-24	4.868E-24	1.128E-23	3.308E-23	8.991E-23	2.348E-22	3.614E-22	1.177E-22
U-234	U-238	1.997E-07	4.083E-16	1.221E-15	2.831E-15	8.298E-15	2.256E-14	5.891E-14	9.066E-14	2.954E-14
U-234	U-238	2.636E-13	5.389E-22	1.612E-21	3.737E-21	1.095E-20	2.977E-20	7.776E-20	1.197E-19	3.899E-20
U-234	U-238	3.794E-15	7.757E-24	2.320E-23	5.379E-23	1.577E-22	4.286E-22	1.119E-21	1.723E-21	5.612E-22
U-234	ΣDOSE(j)		1.449E-03	1.444E-03	1.434E-03	1.401E-03	1.311E-03	1.039E-03	5.352E-04	5.241E-05
U-234	U-234	1.899E-08	2.752E-11	2.743E-11	2.725E-11	2.662E-11	2.491E-11	1.974E-11	1.016E-11	9.931E-13
U-234	U-234	2.100E-04	3.043E-07	3.032E-07	3.012E-07	2.943E-07	2.754E-07	2.183E-07	1.123E-07	1.098E-08
U-234	ΣDOSE(j)		3.043E-07	3.033E-07	3.013E-07	2.943E-07	2.754E-07	2.183E-07	1.123E-07	1.098E-08
U-234	U-234	2.771E-10	4.016E-13	4.003E-13	3.976E-13	3.885E-13	3.635E-13	2.881E-13	1.483E-13	1.449E-14
U-234	U-234	3.989E-12	5.781E-15	5.762E-15	5.724E-15	5.592E-15	5.233E-15	4.147E-15	2.134E-15	2.086E-16
U-234	ΣDOSE(j)		4.074E-13	4.060E-13	4.034E-13	3.941E-13	3.688E-13	2.922E-13	1.504E-13	1.470E-14
U-234	U-234	1.998E-04	2.895E-07	2.885E-07	2.866E-07	2.800E-07	2.620E-07	2.077E-07	1.069E-07	1.044E-08
U-234	U-234	2.637E-10	3.821E-13	3.808E-13	3.783E-13	3.696E-13	3.459E-13	2.741E-13	1.411E-13	1.379E-14
U-234	ΣDOSE(j)		2.895E-07	2.885E-07	2.866E-07	2.800E-07	2.620E-07	2.077E-07	1.069E-07	1.044E-08
U-234	U-234	3.795E-12	5.500E-15	5.482E-15	5.446E-15	5.320E-15	4.978E-15	3.945E-15	2.030E-15	1.985E-16
U-234	U-234	4.196E-08	6.080E-11	6.060E-11	6.020E-11	5.882E-11	5.504E-11	4.362E-11	2.244E-11	2.194E-12
U-234	ΣDOSE(j)		6.081E-11	6.061E-11	6.021E-11	5.882E-11	5.504E-11	4.362E-11	2.245E-11	2.194E-12
U-234	U-234	5.538E-14	8.026E-17	7.999E-17	7.946E-17	7.764E-17	7.265E-17	5.757E-17	2.963E-17	2.896E-18
U-234	U-234	7.972E-16	1.155E-18	1.151E-18	1.144E-18	1.118E-18	1.046E-18	8.287E-19	4.264E-19	4.168E-20
U-234	ΣDOSE(j)		8.141E-17	8.114E-17	8.061E-17	7.875E-17	7.369E-17	5.840E-17	3.005E-17	2.938E-18
U-234	U-234	2.000E-07	2.898E-10	2.889E-10	2.870E-10	2.804E-10	2.623E-10	2.079E-10	1.070E-10	1.046E-11
U-234	U-234	2.640E-13	3.826E-16	3.813E-16	3.788E-16	3.701E-16	3.463E-16	2.744E-16	1.412E-16	1.380E-17
U-234	ΣDOSE(j)		2.898E-10	2.889E-10	2.870E-10	2.804E-10	2.623E-10	2.079E-10	1.070E-10	1.046E-11
U-234	U-234	3.800E-15	5.507E-18	5.488E-18	5.452E-18	5.327E-18	4.984E-18	3.950E-18	2.033E-18	1.987E-19

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	6.820E-10	6.797E-10	6.752E-10	6.597E-10	6.173E-10	4.894E-10	2.520E-10	2.468E-11
U-238	U-238	1.599E-03	1.172E-03	1.168E-03	1.161E-03	1.134E-03	1.061E-03	8.412E-04	4.331E-04	4.242E-05
U-238	ΣDOSE(j)		1.172E-03	1.168E-03	1.161E-03	1.134E-03	1.061E-03	8.412E-04	4.331E-04	4.242E-05
U-238	U-238	2.111E-09	1.547E-09	1.542E-09	1.532E-09	1.497E-09	1.401E-09	1.110E-09	5.717E-10	5.599E-11
U-238	U-238	3.039E-11	2.227E-11	2.220E-11	2.205E-11	2.155E-11	2.016E-11	1.598E-11	8.229E-12	8.060E-13
U-238	ΣDOSE(j)		1.570E-09	1.565E-09	1.554E-09	1.518E-09	1.421E-09	1.126E-09	5.799E-10	5.680E-11
U-238	U-238	3.359E-07	2.462E-07	2.454E-07	2.438E-07	2.382E-07	2.229E-07	1.767E-07	9.097E-08	8.910E-09
U-238	U-238	4.434E-13	3.250E-13	3.240E-13	3.218E-13	3.144E-13	2.942E-13	2.332E-13	1.201E-13	1.176E-14
U-238	ΣDOSE(j)		2.462E-07	2.454E-07	2.438E-07	2.382E-07	2.229E-07	1.767E-07	9.097E-08	8.910E-09
U-238	U-238	6.383E-15	4.679E-15	4.663E-15	4.632E-15	4.526E-15	4.235E-15	3.357E-15	1.728E-15	1.693E-16
U-238	U-238	3.196E-07	2.343E-07	2.335E-07	2.320E-07	2.266E-07	2.121E-07	1.681E-07	8.655E-08	8.477E-09
U-238	ΣDOSE(j)		2.343E-07	2.335E-07	2.320E-07	2.266E-07	2.121E-07	1.681E-07	8.655E-08	8.477E-09
U-238	U-238	4.219E-13	3.092E-13	3.082E-13	3.062E-13	2.992E-13	2.799E-13	2.219E-13	1.143E-13	1.119E-14
U-238	U-238	6.073E-15	4.451E-15	4.437E-15	4.407E-15	4.306E-15	4.029E-15	3.194E-15	1.645E-15	1.611E-16
U-238	ΣDOSE(j)		3.137E-13	3.127E-13	3.106E-13	3.035E-13	2.840E-13	2.251E-13	1.159E-13	1.135E-14
U-238	U-238	6.713E-11	4.921E-11	4.905E-11	4.872E-11	4.760E-11	4.454E-11	3.531E-11	1.818E-11	1.781E-12
U-238	U-238	8.862E-17	6.496E-17	6.474E-17	6.431E-17	6.283E-17	5.880E-17	4.661E-17	2.400E-17	2.350E-18
U-238	ΣDOSE(j)		4.921E-11	4.905E-11	4.872E-11	4.760E-11	4.454E-11	3.531E-11	1.818E-11	1.781E-12
U-238	U-238	1.276E-18	9.350E-19	9.319E-19	9.257E-19	9.044E-19	8.464E-19	6.709E-19	3.454E-19	3.383E-20
U-238	U-238	3.200E-10	2.346E-10	2.338E-10	2.322E-10	2.269E-10	2.123E-10	1.683E-10	8.666E-11	8.487E-12
U-238	ΣDOSE(j)		2.346E-10	2.338E-10	2.322E-10	2.269E-10	2.123E-10	1.683E-10	8.666E-11	8.487E-12
U-238	U-238	4.224E-16	3.096E-16	3.086E-16	3.066E-16	2.995E-16	2.803E-16	2.222E-16	1.144E-16	1.120E-17
U-238	U-238	6.080E-18	4.457E-18	4.442E-18	4.413E-18	4.311E-18	4.034E-18	3.198E-18	1.647E-18	1.613E-19
U-238	ΣDOSE(j)		3.141E-16	3.130E-16	3.110E-16	3.038E-16	2.843E-16	2.254E-16	1.160E-16	1.136E-17
U-238	U-238	9.980E-01	1.426E-02	1.421E-02	1.412E-02	1.380E-02	1.291E-02	1.023E-02	5.269E-03	5.160E-04
U-238	U-238	1.317E-06	1.882E-08	1.876E-08	1.864E-08	1.821E-08	1.704E-08	1.351E-08	6.955E-09	6.811E-10
U-238	ΣDOSE(j)		1.426E-02	1.421E-02	1.412E-02	1.380E-02	1.291E-02	1.023E-02	5.269E-03	5.160E-04
U-238	U-238	1.896E-08	2.710E-10	2.701E-10	2.683E-10	2.621E-10	2.453E-10	1.944E-10	1.001E-10	9.804E-12
U-238	U-238	2.096E-04	2.995E-06	2.985E-06	2.966E-06	2.898E-06	2.712E-06	2.149E-06	1.107E-06	1.084E-07
U-238	ΣDOSE(j)		2.996E-06	2.986E-06	2.966E-06	2.898E-06	2.712E-06	2.150E-06	1.107E-06	1.084E-07
U-238	U-238	2.767E-10	3.954E-12	3.941E-12	3.915E-12	3.825E-12	3.579E-12	2.837E-12	1.461E-12	1.431E-13
U-238	U-238	3.983E-12	5.691E-14	5.672E-14	5.635E-14	5.505E-14	5.152E-14	4.084E-14	2.103E-14	2.059E-15
U-238	ΣDOSE(j)		4.011E-12	3.998E-12	3.971E-12	3.880E-12	3.631E-12	2.878E-12	1.482E-12	1.451E-13
U-238	U-238	1.994E-04	2.850E-06	2.840E-06	2.822E-06	2.757E-06	2.580E-06	2.045E-06	1.053E-06	1.031E-07
U-238	U-238	2.633E-10	3.762E-12	3.749E-12	3.725E-12	3.639E-12	3.405E-12	2.699E-12	1.390E-12	1.361E-13
U-238	ΣDOSE(j)		2.850E-06	2.840E-06	2.822E-06	2.757E-06	2.580E-06	2.045E-06	1.053E-06	1.031E-07
U-238	U-238	3.789E-12	5.415E-14	5.397E-14	5.361E-14	5.238E-14	4.902E-14	3.885E-14	2.000E-14	1.959E-15

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	5.986E-10	5.966E-10	5.927E-10	5.791E-10	5.419E-10	4.295E-10	2.212E-10	2.166E-11
U-238	ΣDOSE(j)		5.987E-10	5.967E-10	5.927E-10	5.791E-10	5.419E-10	4.296E-10	2.212E-10	2.166E-11
U-238	U-238	5.530E-14	7.902E-16	7.875E-16	7.823E-16	7.644E-16	7.153E-16	5.670E-16	2.919E-16	2.859E-17
U-238	U-238	7.959E-16	1.137E-17	1.134E-17	1.126E-17	1.100E-17	1.030E-17	8.161E-18	4.202E-18	4.115E-19
U-238	ΣDOSE(j)		8.015E-16	7.989E-16	7.936E-16	7.754E-16	7.256E-16	5.751E-16	2.961E-16	2.900E-17
U-238	U-238	1.997E-07	2.853E-09	2.844E-09	2.825E-09	2.760E-09	2.583E-09	2.047E-09	1.054E-09	1.032E-10
U-238	U-238	2.636E-13	3.766E-15	3.754E-15	3.729E-15	3.643E-15	3.409E-15	2.703E-15	1.391E-15	1.363E-16
U-238	ΣDOSE(j)		2.853E-09	2.844E-09	2.825E-09	2.760E-09	2.583E-09	2.047E-09	1.054E-09	1.032E-10
U-238	U-238	3.794E-15	5.421E-17	5.403E-17	5.368E-17	5.244E-17	4.908E-17	3.890E-17	2.003E-17	1.962E-18

THF(i) is the thread fraction of the parent nuclide.

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	Pb-210	1.000E+00	1.000E+00	9.676E-01	9.061E-01	7.197E-01	3.728E-01	3.731E-02	5.192E-05	5.222E-15
Pb-210	Pb-210	1.320E-06	1.320E-06	1.277E-06	1.196E-06	9.501E-07	4.922E-07	4.924E-08	6.854E-11	6.893E-21
Pb-210	Ra-226	9.996E-01	0.000E+00	3.066E-02	8.878E-02	2.621E-01	5.669E-01	7.450E-01	4.470E-01	6.266E-02
Pb-210	Ra-226	2.100E-04	0.000E+00	6.440E-06	1.865E-05	5.505E-05	1.191E-04	1.565E-04	9.388E-05	1.316E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	6.127E-06	1.774E-05	5.237E-05	1.133E-04	1.489E-04	8.932E-05	1.252E-05
Pb-210	Ra-226	4.196E-08	0.000E+00	1.287E-09	3.727E-09	1.100E-08	2.380E-08	3.127E-08	1.876E-08	2.630E-09
Pb-210	Ra-226	2.000E-07	0.000E+00	6.134E-09	1.776E-08	5.244E-08	1.134E-07	1.491E-07	8.943E-08	1.254E-08
Pb-210	Th-230	9.996E-01	0.000E+00	6.681E-06	5.872E-05	6.018E-04	4.360E-03	2.602E-02	7.734E-02	1.357E-01
Pb-210	Th-230	2.100E-04	0.000E+00	1.403E-09	1.233E-08	1.264E-07	9.158E-07	5.466E-06	1.624E-05	2.850E-05
Pb-210	Th-230	1.998E-04	0.000E+00	1.335E-09	1.174E-08	1.203E-07	8.713E-07	5.200E-06	1.546E-05	2.712E-05
Pb-210	Th-230	4.196E-08	0.000E+00	2.804E-13	2.465E-12	2.526E-11	1.830E-10	1.092E-09	3.246E-09	5.696E-09
Pb-210	Th-230	2.000E-07	0.000E+00	1.337E-12	1.175E-11	1.204E-10	8.724E-10	5.206E-09	1.547E-08	2.715E-08
Pb-210	U-234	9.996E-01	0.000E+00	2.052E-11	5.434E-10	1.883E-08	4.240E-07	9.087E-06	8.090E-05	3.195E-04
Pb-210	U-234	2.100E-04	0.000E+00	4.310E-15	1.141E-13	3.955E-12	8.905E-11	1.909E-09	1.699E-08	6.712E-08
Pb-210	U-234	1.998E-04	0.000E+00	4.101E-15	1.086E-13	3.763E-12	8.473E-11	1.816E-09	1.617E-08	6.386E-08
Pb-210	U-234	4.196E-08	0.000E+00	8.614E-19	2.281E-17	7.903E-16	1.780E-14	3.814E-13	3.396E-12	1.341E-11
Pb-210	U-234	2.000E-07	0.000E+00	4.106E-18	1.087E-16	3.767E-15	8.483E-14	1.818E-12	1.619E-11	6.394E-11
Pb-210	U-238	1.599E-03	0.000E+00	2.320E-20	1.848E-18	2.153E-16	1.486E-14	1.116E-12	3.044E-11	3.212E-10
Pb-210	U-238	3.359E-07	0.000E+00	4.874E-24	3.882E-22	4.522E-20	3.121E-18	2.343E-16	6.394E-15	6.746E-14
Pb-210	U-238	3.196E-07	0.000E+00	4.637E-24	3.693E-22	4.302E-20	2.970E-18	2.229E-16	6.084E-15	6.419E-14
Pb-210	U-238	6.713E-11	0.000E+00	9.740E-28	7.758E-26	9.036E-24	6.238E-22	4.683E-20	1.278E-18	1.348E-17
Pb-210	U-238	3.200E-10	0.000E+00	4.643E-27	3.698E-25	4.307E-23	2.973E-21	2.232E-19	6.091E-18	6.426E-17
Pb-210	U-238	9.980E-01	0.000E+00	1.448E-17	1.153E-15	1.343E-13	9.273E-12	6.961E-10	1.900E-08	2.004E-07
Pb-210	U-238	2.096E-04	0.000E+00	3.041E-21	2.422E-19	2.822E-17	1.948E-15	1.462E-13	3.990E-12	4.210E-11
Pb-210	U-238	1.994E-04	0.000E+00	2.894E-21	2.305E-19	2.685E-17	1.853E-15	1.391E-13	3.796E-12	4.005E-11
Pb-210	U-238	4.189E-08	0.000E+00	6.078E-25	4.841E-23	5.639E-21	3.893E-19	2.922E-17	7.974E-16	8.413E-15
Pb-210	U-238	1.997E-07	0.000E+00	2.897E-24	2.308E-22	2.688E-20	1.855E-18	1.393E-16	3.801E-15	4.010E-14
Pb-210	ΣS(j):		1.000E+00	9.983E-01	9.949E-01	9.825E-01	9.444E-01	8.086E-01	5.246E-01	1.988E-01
Po-210	Pb-210	1.000E+00	0.000E+00	8.172E-01	9.104E-01	7.263E-01	3.763E-01	3.765E-02	5.240E-05	5.269E-15
Po-210	Po-210	1.000E+00	1.000E+00	1.579E-01	3.935E-03	9.623E-09	8.911E-25	0.000E+00	0.000E+00	0.000E+00
Po-210	Ra-226	9.996E-01	0.000E+00	1.660E-02	7.271E-02	2.479E-01	5.564E-01	7.389E-01	4.437E-01	6.220E-02
Po-210	Ra-226	2.100E-04	0.000E+00	3.486E-06	1.527E-05	5.206E-05	1.169E-04	1.552E-04	9.319E-05	1.307E-05
Po-210	Ra-226	1.998E-04	0.000E+00	3.317E-06	1.453E-05	4.953E-05	1.112E-04	1.477E-04	8.867E-05	1.243E-05
Po-210	Ra-226	4.196E-08	0.000E+00	6.967E-10	3.052E-09	1.040E-08	2.336E-08	3.101E-08	1.862E-08	2.611E-09
Po-210	Ra-226	2.000E-07	0.000E+00	3.321E-09	1.455E-08	4.959E-08	1.113E-07	1.478E-07	8.877E-08	1.245E-08
Po-210	Th-230	9.996E-01	0.000E+00	2.726E-06	4.114E-05	5.383E-04	4.191E-03	2.562E-02	7.655E-02	1.345E-01
Po-210	Th-230	2.100E-04	0.000E+00	5.727E-10	8.641E-09	1.131E-07	8.803E-07	5.381E-06	1.608E-05	2.825E-05
Po-210	Th-230	1.998E-04	0.000E+00	5.448E-10	8.221E-09	1.076E-07	8.375E-07	5.120E-06	1.530E-05	2.687E-05
Po-210	Th-230	4.196E-08	0.000E+00	1.144E-13	1.727E-12	2.260E-11	1.759E-10	1.075E-09	3.213E-09	5.645E-09
Po-210	Th-230	2.000E-07	0.000E+00	5.455E-13	8.231E-12	1.077E-10	8.386E-10	5.126E-09	1.532E-08	2.691E-08
Po-210	U-234	9.996E-01	0.000E+00	6.770E-12	3.343E-10	1.601E-08	4.001E-07	8.895E-06	7.995E-05	3.166E-04
Po-210	U-234	2.100E-04	0.000E+00	1.422E-15	7.021E-14	3.363E-12	8.403E-11	1.868E-09	1.679E-08	6.650E-08
Po-210	U-234	1.998E-04	0.000E+00	1.353E-15	6.680E-14	3.199E-12	7.995E-11	1.778E-09	1.598E-08	6.327E-08
Po-210	U-234	4.196E-08	0.000E+00	2.842E-19	1.403E-17	6.720E-16	1.679E-14	3.734E-13	3.356E-12	1.329E-11
Po-210	U-234	2.000E-07	0.000E+00	1.355E-18	6.688E-17	3.203E-15	8.005E-14	1.780E-12	1.600E-11	6.335E-11
Po-210	U-238	1.599E-03	0.000E+00	6.444E-21	1.016E-18	1.745E-16	1.378E-14	1.086E-12	3.003E-11	3.181E-10
Po-210	U-238	3.359E-07	0.000E+00	1.353E-24	2.133E-22	3.666E-20	2.893E-18	2.281E-16	6.308E-15	6.682E-14
Po-210	U-238	3.196E-07	0.000E+00	1.288E-24	2.030E-22	3.487E-20	2.753E-18	2.170E-16	6.002E-15	6.358E-14

Summary : Recreator (Indoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-210	U-238	6.713E-11	0.000E+00	2.705E-28	4.263E-26	7.325E-24	5.782E-22	4.558E-20	1.261E-18	1.335E-17
Po-210	U-238	3.200E-10	0.000E+00	1.289E-27	2.032E-25	3.492E-23	2.756E-21	2.173E-19	6.009E-18	6.366E-17
Po-210	U-238	9.980E-01	0.000E+00	4.021E-18	6.337E-16	1.089E-13	8.596E-12	6.776E-10	1.874E-08	1.985E-07
Po-210	U-238	2.096E-04	0.000E+00	8.445E-22	1.331E-19	2.287E-17	1.806E-15	1.423E-13	3.936E-12	4.170E-11
Po-210	U-238	1.994E-04	0.000E+00	8.035E-22	1.266E-19	2.176E-17	1.718E-15	1.354E-13	3.745E-12	3.967E-11
Po-210	U-238	4.189E-08	0.000E+00	1.688E-25	2.660E-23	4.571E-21	3.608E-19	2.844E-17	7.866E-16	8.333E-15
Po-210	U-238	1.997E-07	0.000E+00	8.045E-25	1.268E-22	2.179E-20	1.720E-18	1.356E-16	3.750E-15	3.972E-14
Po-210	ΣS(j):		1.000E+00	9.917E-01	9.871E-01	9.748E-01	9.371E-01	8.024E-01	5.206E-01	1.971E-01
Pb-210	Pb-210	1.900E-08	1.900E-08	1.839E-08	1.722E-08	1.368E-08	7.084E-09	7.088E-10	9.865E-13	9.921E-23
Pb-210	Ra-226	1.899E-08	0.000E+00	5.825E-10	1.687E-09	4.979E-09	1.077E-08	1.415E-08	8.492E-09	1.191E-09
Pb-210	Ra-226	3.989E-12	0.000E+00	1.224E-13	3.543E-13	1.046E-12	2.263E-12	2.973E-12	1.784E-12	2.501E-13
Pb-210	Ra-226	3.795E-12	0.000E+00	1.164E-13	3.371E-13	9.951E-13	2.153E-12	2.829E-12	1.697E-12	2.379E-13
Pb-210	Ra-226	7.972E-16	0.000E+00	2.445E-17	7.080E-17	2.090E-16	4.521E-16	5.941E-16	3.565E-16	4.997E-17
Pb-210	Ra-226	3.800E-15	0.000E+00	1.166E-16	3.375E-16	9.963E-16	2.155E-15	2.832E-15	1.699E-15	2.382E-16
Pb-210	Th-230	1.899E-08	0.000E+00	1.269E-13	1.116E-12	1.143E-11	8.284E-11	4.944E-10	1.469E-09	2.578E-09
Pb-210	Th-230	3.989E-12	0.000E+00	2.666E-17	2.344E-16	2.402E-15	1.740E-14	1.038E-13	3.087E-13	5.415E-13
Pb-210	Th-230	3.795E-12	0.000E+00	2.537E-17	2.230E-16	2.285E-15	1.656E-14	9.880E-14	2.937E-13	5.152E-13
Pb-210	Th-230	7.972E-16	0.000E+00	5.328E-21	4.683E-20	4.800E-19	3.477E-18	2.075E-17	6.168E-17	1.082E-16
Pb-210	Th-230	3.800E-15	0.000E+00	2.540E-20	2.232E-19	2.288E-18	1.658E-17	9.892E-17	2.940E-16	5.158E-16
Pb-210	U-234	1.899E-08	0.000E+00	3.899E-19	1.033E-17	3.577E-16	8.056E-15	1.727E-13	1.537E-12	6.071E-12
Pb-210	U-234	3.989E-12	0.000E+00	8.189E-23	2.169E-21	7.514E-20	1.692E-18	3.627E-17	3.229E-16	1.275E-15
Pb-210	U-234	3.795E-12	0.000E+00	7.792E-23	2.063E-21	7.149E-20	1.610E-18	3.450E-17	3.072E-16	1.213E-15
Pb-210	U-234	7.972E-16	0.000E+00	1.637E-26	4.334E-25	1.502E-23	3.381E-22	7.247E-21	6.452E-20	2.548E-19
Pb-210	U-234	3.800E-15	0.000E+00	7.801E-26	2.066E-24	7.158E-23	1.612E-21	3.455E-20	3.076E-19	1.215E-18
Pb-210	U-238	3.039E-11	0.000E+00	4.409E-28	3.512E-26	4.090E-24	2.824E-22	2.120E-20	5.784E-19	6.103E-18
Pb-210	U-238	6.383E-15	0.000E+00	9.261E-32	7.376E-30	8.592E-28	5.931E-26	4.452E-24	1.215E-22	1.282E-21
Pb-210	U-238	6.073E-15	0.000E+00	8.811E-32	7.018E-30	8.174E-28	5.643E-26	4.236E-24	1.156E-22	1.220E-21
Pb-210	U-238	1.276E-18	0.000E+00	1.851E-35	1.474E-33	1.717E-31	1.185E-29	8.897E-28	2.428E-26	2.562E-25
Pb-210	U-238	6.080E-18	0.000E+00	8.821E-35	7.026E-33	8.184E-31	5.650E-29	4.241E-27	1.157E-25	1.221E-24
Pb-210	U-238	1.896E-08	0.000E+00	2.751E-25	2.191E-23	2.552E-21	1.762E-19	1.323E-17	3.609E-16	3.808E-15
Pb-210	U-238	3.983E-12	0.000E+00	5.779E-29	4.603E-27	5.361E-25	3.701E-23	2.778E-21	7.581E-20	7.999E-19
Pb-210	U-238	3.789E-12	0.000E+00	5.498E-29	4.379E-27	5.101E-25	3.521E-23	2.643E-21	7.213E-20	7.610E-19
Pb-210	U-238	7.959E-16	0.000E+00	1.155E-32	9.198E-31	1.071E-28	7.396E-27	5.552E-25	1.515E-23	1.598E-22
Pb-210	U-238	3.794E-15	0.000E+00	5.505E-32	4.384E-30	5.107E-28	3.525E-26	2.646E-24	7.222E-23	7.619E-22
Pb-210	ΣS(j):		1.900E-08	1.897E-08	1.890E-08	1.867E-08	1.794E-08	1.536E-08	9.968E-09	3.776E-09
Ra-226	Ra-226	9.996E-01	9.996E-01	9.968E-01	9.912E-01	9.719E-01	9.189E-01	7.550E-01	4.306E-01	6.037E-02
Ra-226	Ra-226	1.319E-06	1.319E-06	1.316E-06	1.308E-06	1.283E-06	1.213E-06	9.965E-07	5.684E-07	7.968E-08
Ra-226	Th-230	9.996E-01	0.000E+00	4.324E-04	1.294E-03	4.270E-03	1.246E-02	3.773E-02	8.763E-02	1.437E-01
Ra-226	Th-230	1.319E-06	0.000E+00	5.708E-10	1.708E-09	5.636E-09	1.644E-08	4.981E-08	1.157E-07	1.897E-07
Ra-226	Th-230	1.899E-08	0.000E+00	8.216E-12	2.458E-11	8.113E-11	2.367E-10	7.169E-10	1.665E-09	2.731E-09
Ra-226	U-234	9.996E-01	0.000E+00	1.987E-09	1.781E-08	1.951E-07	1.686E-06	1.627E-05	9.938E-05	3.425E-04
Ra-226	U-234	1.319E-06	0.000E+00	2.623E-15	2.351E-14	2.575E-13	2.225E-12	2.147E-11	1.312E-10	4.521E-10
Ra-226	U-234	1.899E-08	0.000E+00	3.775E-17	3.384E-16	3.706E-15	3.203E-14	3.091E-13	1.888E-12	6.508E-12
Ra-226	U-238	1.599E-03	0.000E+00	2.991E-18	8.038E-17	2.928E-15	7.542E-14	2.371E-12	4.053E-11	3.504E-10
Ra-226	U-238	2.111E-09	0.000E+00	3.948E-24	1.061E-22	3.865E-21	9.955E-20	3.130E-18	5.351E-17	4.625E-16
Ra-226	U-238	3.039E-11	0.000E+00	5.683E-26	1.527E-24	5.563E-23	1.433E-21	4.505E-20	7.701E-19	6.657E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.866E-15	5.015E-14	1.827E-12	4.706E-11	1.480E-09	2.529E-08	2.186E-07

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	1.317E-06	0.000E+00	2.464E-21	6.620E-20	2.412E-18	6.212E-17	1.953E-15	3.339E-14	2.886E-13
Ra-226	U-238	1.896E-08	0.000E+00	3.546E-23	9.529E-22	3.471E-20	8.941E-19	2.811E-17	4.806E-16	4.154E-15
Ra-226	ΣS(j):		9.996E-01	9.972E-01	9.925E-01	9.762E-01	9.313E-01	7.927E-01	5.184E-01	2.044E-01
Pb-210	Ra-226	1.319E-06	0.000E+00	4.047E-08	1.172E-07	3.459E-07	7.484E-07	9.833E-07	5.900E-07	8.271E-08
Pb-210	Ra-226	2.771E-10	0.000E+00	8.501E-12	2.461E-11	7.266E-11	1.572E-10	2.065E-10	1.239E-10	1.737E-11
Pb-210	Ra-226	2.637E-10	0.000E+00	8.088E-12	2.342E-11	6.913E-11	1.496E-10	1.965E-10	1.179E-10	1.653E-11
Pb-210	Ra-226	5.538E-14	0.000E+00	1.699E-15	4.919E-15	1.452E-14	3.141E-14	4.128E-14	2.476E-14	3.472E-15
Pb-210	Ra-226	2.640E-13	0.000E+00	8.097E-15	2.345E-14	6.922E-14	1.497E-13	1.967E-13	1.180E-13	1.655E-14
Pb-210	Th-230	1.319E-06	0.000E+00	8.818E-12	7.752E-11	7.944E-10	5.755E-09	3.435E-08	1.021E-07	1.791E-07
Pb-210	Th-230	2.771E-10	0.000E+00	1.852E-15	1.628E-14	1.669E-13	1.209E-12	7.215E-12	2.144E-11	3.762E-11
Pb-210	Th-230	2.637E-10	0.000E+00	1.762E-15	1.549E-14	1.588E-13	1.150E-12	6.864E-12	2.040E-11	3.579E-11
Pb-210	Th-230	5.538E-14	0.000E+00	3.702E-19	3.254E-18	3.335E-17	2.416E-16	1.442E-15	4.285E-15	7.518E-15
Pb-210	Th-230	2.640E-13	0.000E+00	1.764E-18	1.551E-17	1.589E-16	1.152E-15	6.872E-15	2.043E-14	3.584E-14
Pb-210	U-234	1.319E-06	0.000E+00	2.709E-17	7.173E-16	2.485E-14	5.597E-13	1.200E-11	1.068E-10	4.218E-10
Pb-210	U-234	2.771E-10	0.000E+00	5.689E-21	1.507E-19	5.220E-18	1.176E-16	2.519E-15	2.243E-14	8.860E-14
Pb-210	U-234	2.637E-10	0.000E+00	5.413E-21	1.433E-19	4.967E-18	1.118E-16	2.397E-15	2.134E-14	8.429E-14
Pb-210	U-234	5.538E-14	0.000E+00	1.137E-24	3.011E-23	1.043E-21	2.349E-20	5.035E-19	4.483E-18	1.771E-17
Pb-210	U-234	2.640E-13	0.000E+00	5.420E-24	1.435E-22	4.973E-21	1.120E-19	2.400E-18	2.137E-17	8.439E-17
Pb-210	U-238	2.111E-09	0.000E+00	3.063E-26	2.440E-24	2.842E-22	1.962E-20	1.473E-18	4.019E-17	4.240E-16
Pb-210	U-238	4.434E-13	0.000E+00	6.434E-30	5.124E-28	5.969E-26	4.120E-24	3.093E-22	8.441E-21	8.905E-20
Pb-210	U-238	4.219E-13	0.000E+00	6.121E-30	4.875E-28	5.679E-26	3.920E-24	2.943E-22	8.031E-21	8.473E-20
Pb-210	U-238	8.862E-17	0.000E+00	1.286E-33	1.024E-31	1.193E-29	8.234E-28	6.181E-26	1.687E-24	1.780E-23
Pb-210	U-238	4.224E-16	0.000E+00	6.129E-33	4.881E-31	5.686E-29	3.925E-27	2.946E-25	8.040E-24	8.483E-23
Pb-210	U-238	1.317E-06	0.000E+00	1.911E-23	1.522E-21	1.773E-19	1.224E-17	9.189E-16	2.508E-14	2.646E-13
Pb-210	U-238	2.767E-10	0.000E+00	4.015E-27	3.198E-25	3.725E-23	2.571E-21	1.930E-19	5.267E-18	5.557E-17
Pb-210	U-238	2.633E-10	0.000E+00	3.820E-27	3.042E-25	3.544E-23	2.446E-21	1.836E-19	5.011E-18	5.287E-17
Pb-210	U-238	5.530E-14	0.000E+00	8.023E-31	6.390E-29	7.443E-27	5.138E-25	3.857E-23	1.053E-21	1.110E-20
Pb-210	U-238	2.636E-13	0.000E+00	3.824E-30	3.046E-28	3.548E-26	2.449E-24	1.838E-22	5.017E-21	5.293E-20
Pb-210	ΣS(j):		0.000E+00	4.050E-08	1.173E-07	3.469E-07	7.544E-07	1.018E-06	6.925E-07	2.624E-07
Ra-226	Ra-226	1.899E-08	1.899E-08	1.894E-08	1.883E-08	1.847E-08	1.746E-08	1.434E-08	8.182E-09	1.147E-09
Ra-226	Ra-226	2.100E-04	2.100E-04	2.094E-04	2.082E-04	2.041E-04	1.930E-04	1.586E-04	9.045E-05	1.268E-05
Ra-226	ΣS(j):		2.100E-04	2.094E-04	2.082E-04	2.042E-04	1.930E-04	1.586E-04	9.046E-05	1.268E-05
Ra-226	Ra-226	2.771E-10	2.771E-10	2.764E-10	2.748E-10	2.695E-10	2.548E-10	2.093E-10	1.194E-10	1.674E-11
Ra-226	Ra-226	3.989E-12	3.989E-12	3.978E-12	3.956E-12	3.879E-12	3.667E-12	3.013E-12	1.719E-12	2.409E-13
Ra-226	ΣS(j):		2.811E-10	2.803E-10	2.788E-10	2.734E-10	2.584E-10	2.123E-10	1.211E-10	1.698E-11
Ra-226	Ra-226	1.998E-04	1.998E-04	1.992E-04	1.981E-04	1.942E-04	1.836E-04	1.509E-04	8.606E-05	1.206E-05
Ra-226	Ra-226	2.637E-10	2.637E-10	2.629E-10	2.615E-10	2.564E-10	2.424E-10	1.991E-10	1.136E-10	1.592E-11
Ra-226	Th-230	1.998E-04	0.000E+00	8.642E-08	2.585E-07	8.533E-07	2.489E-06	7.541E-06	1.751E-05	2.872E-05
Ra-226	Th-230	2.637E-10	0.000E+00	1.141E-13	3.412E-13	1.126E-12	3.286E-12	9.954E-12	2.312E-11	3.792E-11
Ra-226	Th-230	3.795E-12	0.000E+00	1.642E-15	4.912E-15	1.621E-14	4.730E-14	1.433E-13	3.327E-13	5.458E-13
Ra-226	U-234	1.998E-04	0.000E+00	3.971E-13	3.559E-12	3.898E-11	3.368E-10	3.251E-09	1.986E-08	6.845E-08
Ra-226	U-234	2.637E-10	0.000E+00	5.241E-19	4.698E-18	5.146E-17	4.446E-16	4.291E-15	2.622E-14	9.036E-14
Ra-226	U-234	3.795E-12	0.000E+00	7.544E-21	6.762E-20	7.407E-19	6.400E-18	6.177E-17	3.773E-16	1.301E-15
Ra-226	U-238	3.196E-07	0.000E+00	5.977E-22	1.606E-20	5.851E-19	1.507E-17	4.739E-16	8.100E-15	7.002E-14
Ra-226	U-238	4.219E-13	0.000E+00	7.890E-28	2.120E-26	7.724E-25	1.989E-23	6.255E-22	1.069E-20	9.243E-20

Summary : Recreator (Indoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-238	6.073E-15	0.000E+00	1.136E-29	3.052E-28	1.112E-26	2.864E-25	9.003E-24	1.539E-22	1.330E-21
Ra-226	U-238	1.994E-04	0.000E+00	3.730E-19	1.002E-17	3.651E-16	9.404E-15	2.957E-13	5.055E-12	4.369E-11
Ra-226	U-238	2.633E-10	0.000E+00	4.923E-25	1.323E-23	4.820E-22	1.241E-20	3.903E-19	6.672E-18	5.768E-17
Ra-226	U-238	3.789E-12	0.000E+00	7.087E-27	1.904E-25	6.937E-24	1.787E-22	5.618E-21	9.604E-20	8.302E-19
Ra-226	ΣS(j):		1.998E-04	1.993E-04	1.983E-04	1.951E-04	1.861E-04	1.584E-04	1.036E-04	4.086E-05
Ra-226	Ra-226	3.795E-12	3.795E-12	3.785E-12	3.764E-12	3.690E-12	3.489E-12	2.867E-12	1.635E-12	2.292E-13
Ra-226	Ra-226	4.196E-08	4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	ΣS(j):		4.196E-08	4.184E-08	4.161E-08	4.080E-08	3.857E-08	3.169E-08	1.808E-08	2.534E-09
Ra-226	Ra-226	5.538E-14	5.538E-14	5.523E-14	5.492E-14	5.385E-14	5.091E-14	4.183E-14	2.386E-14	3.345E-15
Ra-226	Ra-226	7.972E-16	7.972E-16	7.950E-16	7.905E-16	7.751E-16	7.328E-16	6.021E-16	3.434E-16	4.814E-17
Ra-226	ΣS(j):		5.618E-14	5.602E-14	5.571E-14	5.463E-14	5.164E-14	4.243E-14	2.420E-14	3.393E-15
Ra-226	Ra-226	2.000E-07	2.000E-07	1.994E-07	1.983E-07	1.945E-07	1.838E-07	1.511E-07	8.616E-08	1.208E-08
Ra-226	Ra-226	2.640E-13	2.640E-13	2.633E-13	2.618E-13	2.567E-13	2.427E-13	1.994E-13	1.137E-13	1.594E-14
Ra-226	Th-230	2.000E-07	0.000E+00	8.652E-11	2.588E-10	8.543E-10	2.492E-09	7.550E-09	1.753E-08	2.876E-08
Ra-226	Th-230	2.640E-13	0.000E+00	1.142E-16	3.417E-16	1.128E-15	3.290E-15	9.966E-15	2.314E-14	3.796E-14
Ra-226	Th-230	3.800E-15	0.000E+00	1.644E-18	4.918E-18	1.623E-17	4.736E-17	1.434E-16	3.331E-16	5.464E-16
Ra-226	U-234	2.000E-07	0.000E+00	3.975E-16	3.563E-15	3.903E-14	3.372E-13	3.255E-12	1.988E-11	6.853E-11
Ra-226	U-234	2.640E-13	0.000E+00	5.248E-22	4.704E-21	5.152E-20	4.452E-19	4.296E-18	2.625E-17	9.046E-17
Ra-226	U-234	3.800E-15	0.000E+00	7.553E-24	6.770E-23	7.416E-22	6.408E-21	6.184E-20	3.778E-19	1.302E-18
Ra-226	U-238	3.200E-10	0.000E+00	5.984E-25	1.608E-23	5.858E-22	1.509E-20	4.744E-19	8.110E-18	7.011E-17
Ra-226	U-238	4.224E-16	0.000E+00	7.899E-31	2.123E-29	7.733E-28	1.992E-26	6.262E-25	1.071E-23	9.254E-23
Ra-226	U-238	6.080E-18	0.000E+00	1.137E-32	3.056E-31	1.113E-29	2.867E-28	9.014E-27	1.541E-25	1.332E-24
Ra-226	U-238	1.997E-07	0.000E+00	3.734E-22	1.003E-20	3.656E-19	9.416E-18	2.960E-16	5.061E-15	4.375E-14
Ra-226	U-238	2.636E-13	0.000E+00	4.929E-28	1.325E-26	4.826E-25	1.243E-23	3.908E-22	6.680E-21	5.775E-20
Ra-226	U-238	3.794E-15	0.000E+00	7.095E-30	1.907E-28	6.946E-27	1.789E-25	5.625E-24	9.615E-23	8.312E-22
Ra-226	ΣS(j):		2.000E-07	1.995E-07	1.986E-07	1.953E-07	1.863E-07	1.586E-07	1.037E-07	4.091E-08
Ra-226	Ra-226	3.800E-15	3.800E-15	3.789E-15	3.768E-15	3.695E-15	3.493E-15	2.870E-15	1.637E-15	2.295E-16
Th-230	Th-230	9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.984E-01	9.960E-01	9.877E-01
Th-230	Th-230	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.319E-06	1.318E-06	1.315E-06	1.304E-06
Th-230	U-234	9.996E-01	0.000E+00	9.176E-06	2.744E-05	9.040E-05	2.624E-04	7.816E-04	1.742E-03	2.644E-03
Th-230	U-234	1.319E-06	0.000E+00	1.211E-11	3.622E-11	1.193E-10	3.464E-10	1.032E-09	2.299E-09	3.490E-09
Th-230	U-234	1.899E-08	0.000E+00	1.743E-13	5.213E-13	1.718E-12	4.986E-12	1.485E-11	3.310E-11	5.023E-11
Th-230	U-234	2.100E-04	0.000E+00	1.927E-09	5.763E-09	1.899E-08	5.512E-08	1.642E-07	3.659E-07	5.553E-07
Th-230	U-234	2.771E-10	0.000E+00	2.544E-15	7.607E-15	2.506E-14	7.275E-14	2.167E-13	4.830E-13	7.330E-13
Th-230	U-234	3.989E-12	0.000E+00	3.662E-17	1.095E-16	3.608E-16	1.047E-15	3.119E-15	6.952E-15	1.055E-14
Th-230	U-234	1.998E-04	0.000E+00	1.834E-09	5.483E-09	1.807E-08	5.244E-08	1.562E-07	3.481E-07	5.283E-07
Th-230	U-234	2.637E-10	0.000E+00	2.421E-15	7.238E-15	2.385E-14	6.922E-14	2.062E-13	4.595E-13	6.974E-13
Th-230	U-234	3.795E-12	0.000E+00	3.484E-17	1.042E-16	3.432E-16	9.963E-16	2.968E-15	6.614E-15	1.004E-14
Th-230	U-234	4.196E-08	0.000E+00	3.852E-13	1.152E-12	3.795E-12	1.101E-11	3.281E-11	7.312E-11	1.110E-10
Th-230	U-234	5.538E-14	0.000E+00	5.084E-19	1.520E-18	5.009E-18	1.454E-17	4.331E-17	9.651E-17	1.465E-16
Th-230	U-234	7.972E-16	0.000E+00	7.318E-21	2.188E-20	7.210E-20	2.093E-19	6.233E-19	1.389E-18	2.108E-18
Th-230	U-234	2.000E-07	0.000E+00	1.836E-12	5.490E-12	1.809E-11	5.250E-11	1.564E-10	3.485E-10	5.290E-10
Th-230	U-234	2.640E-13	0.000E+00	2.424E-18	7.246E-18	2.388E-17	6.930E-17	2.064E-16	4.601E-16	6.982E-16
Th-230	U-234	3.800E-15	0.000E+00	3.488E-20	1.043E-19	3.437E-19	9.975E-19	2.971E-18	6.622E-18	1.005E-17

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	U-238	1.599E-03	0.000E+00	2.072E-14	1.856E-13	2.031E-12	1.749E-11	1.668E-10	9.884E-10	3.158E-09
Th-230	U-238	2.111E-09	0.000E+00	2.734E-20	2.450E-19	2.680E-18	2.308E-17	2.202E-16	1.305E-15	4.168E-15
Th-230	U-238	3.039E-11	0.000E+00	3.936E-22	3.527E-21	3.858E-20	3.323E-19	3.170E-18	1.878E-17	5.999E-17
Th-230	U-238	3.359E-07	0.000E+00	4.351E-18	3.899E-17	4.265E-16	3.673E-15	3.504E-14	2.076E-13	6.632E-13
Th-230	U-238	4.434E-13	0.000E+00	5.743E-24	5.146E-23	5.630E-22	4.848E-21	4.626E-20	2.740E-19	8.754E-19
Th-230	U-238	6.383E-15	0.000E+00	8.267E-26	7.408E-25	8.104E-24	6.979E-23	6.658E-22	3.945E-21	1.260E-20
Th-230	U-238	3.196E-07	0.000E+00	4.140E-18	3.709E-17	4.058E-16	3.495E-15	3.334E-14	1.975E-13	6.310E-13
Th-230	U-238	4.219E-13	0.000E+00	5.464E-24	4.896E-23	5.357E-22	4.613E-21	4.401E-20	2.607E-19	8.329E-19
Th-230	U-238	6.073E-15	0.000E+00	7.866E-26	7.048E-25	7.710E-24	6.640E-23	6.335E-22	3.753E-21	1.199E-20
Th-230	U-238	6.713E-11	0.000E+00	8.695E-22	7.791E-21	8.524E-20	7.340E-19	7.003E-18	4.149E-17	1.325E-16
Th-230	U-238	8.862E-17	0.000E+00	1.148E-27	1.028E-26	1.125E-25	9.689E-25	9.244E-24	5.476E-23	1.749E-22
Th-230	U-238	1.276E-18	0.000E+00	1.652E-29	1.480E-28	1.620E-27	1.395E-26	1.331E-25	7.883E-25	2.518E-24
Th-230	U-238	3.200E-10	0.000E+00	4.145E-21	3.714E-20	4.063E-19	3.499E-18	3.338E-17	1.978E-16	6.318E-16
Th-230	U-238	4.224E-16	0.000E+00	5.471E-27	4.902E-26	5.363E-25	4.619E-24	4.406E-23	2.610E-22	8.339E-22
Th-230	U-238	6.080E-18	0.000E+00	7.875E-29	7.056E-28	7.720E-27	6.648E-26	6.342E-25	3.757E-24	1.200E-23
Th-230	U-238	9.980E-01	0.000E+00	1.293E-11	1.158E-10	1.267E-09	1.091E-08	1.041E-07	6.168E-07	1.970E-06
Th-230	U-238	1.317E-06	0.000E+00	1.706E-17	1.529E-16	1.673E-15	1.440E-14	1.374E-13	8.141E-13	2.601E-12
Th-230	U-238	1.896E-08	0.000E+00	2.456E-19	2.201E-18	2.408E-17	2.073E-16	1.978E-15	1.172E-14	3.744E-14
Th-230	U-238	2.096E-04	0.000E+00	2.715E-15	2.433E-14	2.662E-13	2.292E-12	2.187E-11	1.295E-10	4.138E-10
Th-230	U-238	2.767E-10	0.000E+00	3.584E-21	3.211E-20	3.513E-19	3.025E-18	2.886E-17	1.710E-16	5.463E-16
Th-230	U-238	3.983E-12	0.000E+00	5.159E-23	4.622E-22	5.057E-21	4.355E-20	4.155E-19	2.461E-18	7.863E-18
Th-230	U-238	1.994E-04	0.000E+00	2.583E-15	2.315E-14	2.532E-13	2.181E-12	2.080E-11	1.233E-10	3.937E-10
Th-230	U-238	2.633E-10	0.000E+00	3.410E-21	3.055E-20	3.343E-19	2.878E-18	2.746E-17	1.627E-16	5.197E-16
Th-230	U-238	3.789E-12	0.000E+00	4.908E-23	4.398E-22	4.811E-21	4.143E-20	3.953E-19	2.342E-18	7.481E-18
Th-230	U-238	4.189E-08	0.000E+00	5.426E-19	4.862E-18	5.319E-17	4.580E-16	4.370E-15	2.589E-14	8.270E-14
Th-230	U-238	5.530E-14	0.000E+00	7.162E-25	6.417E-24	7.021E-23	6.046E-22	5.768E-21	3.417E-20	1.092E-19
Th-230	U-238	7.959E-16	0.000E+00	1.031E-26	9.237E-26	1.011E-24	8.703E-24	8.303E-23	4.919E-22	1.571E-21
Th-230	U-238	1.997E-07	0.000E+00	2.586E-18	2.317E-17	2.535E-16	2.183E-15	2.083E-14	1.234E-13	3.942E-13
Th-230	U-238	2.636E-13	0.000E+00	3.414E-24	3.059E-23	3.347E-22	2.882E-21	2.749E-20	1.629E-19	5.204E-19
Th-230	U-238	3.794E-15	0.000E+00	4.914E-26	4.403E-25	4.817E-24	4.148E-23	3.958E-22	2.345E-21	7.490E-21
Th-230	ΣS(j):		9.996E-01	9.996E-01	9.996E-01	9.996E-01	9.995E-01	9.992E-01	9.977E-01	9.903E-01
Th-230	Th-230	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.899E-08	1.897E-08	1.892E-08	1.877E-08
Th-230	Th-230	2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Th-230	ΣS(j):		2.100E-04	2.100E-04	2.100E-04	2.100E-04	2.099E-04	2.097E-04	2.092E-04	2.075E-04
Ra-226	Th-230	2.100E-04	0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.926E-06	1.841E-05	3.019E-05
Ra-226	Th-230	3.989E-12	0.000E+00	1.726E-15	5.163E-15	1.704E-14	4.971E-14	1.506E-13	3.497E-13	5.736E-13
Ra-226	U-234	2.100E-04	0.000E+00	4.173E-13	3.741E-12	4.097E-11	3.540E-10	3.417E-09	2.087E-08	7.195E-08
Ra-226	U-234	2.771E-10	0.000E+00	5.509E-19	4.938E-18	5.408E-17	4.673E-16	4.510E-15	2.755E-14	9.497E-14
Ra-226	U-234	3.989E-12	0.000E+00	7.929E-21	7.107E-20	7.785E-19	6.727E-18	6.492E-17	3.966E-16	1.367E-15
Ra-226	U-238	3.359E-07	0.000E+00	6.282E-22	1.688E-20	6.150E-19	1.584E-17	4.980E-16	8.514E-15	7.360E-14
Ra-226	U-238	4.434E-13	0.000E+00	8.293E-28	2.228E-26	8.118E-25	2.091E-23	6.574E-22	1.124E-20	9.715E-20
Ra-226	U-238	6.383E-15	0.000E+00	1.194E-29	3.208E-28	1.169E-26	3.010E-25	9.463E-24	1.618E-22	1.398E-21
Ra-226	U-238	2.096E-04	0.000E+00	3.920E-19	1.053E-17	3.838E-16	9.885E-15	3.108E-13	5.313E-12	4.592E-11
Ra-226	U-238	2.767E-10	0.000E+00	5.175E-25	1.391E-23	5.066E-22	1.305E-20	4.102E-19	7.013E-18	6.062E-17
Ra-226	U-238	3.983E-12	0.000E+00	7.448E-27	2.002E-25	7.292E-24	1.878E-22	5.905E-21	1.009E-19	8.726E-19
Ra-226	ΣS(j):		0.000E+00	9.083E-08	2.717E-07	8.969E-07	2.617E-06	7.929E-06	1.843E-05	3.026E-05

Summary : Recreator (Indoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.771E-10	2.770E-10	2.768E-10	2.762E-10	2.738E-10
Th-230	Th-230	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.989E-12	3.988E-12	3.984E-12	3.975E-12	3.942E-12
Th-230	ΣS(j):		2.811E-10	2.811E-10	2.811E-10	2.811E-10	2.810E-10	2.808E-10	2.801E-10	2.778E-10
Ra-226	Th-230	2.771E-10	0.000E+00	1.199E-13	3.587E-13	1.184E-12	3.454E-12	1.046E-11	2.430E-11	3.985E-11
Th-230	Th-230	1.998E-04	1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	2.637E-10	2.637E-10	2.637E-10	2.637E-10	2.636E-10	2.636E-10	2.634E-10	2.627E-10	2.605E-10
Th-230	ΣS(j):		1.998E-04	1.998E-04	1.998E-04	1.997E-04	1.997E-04	1.995E-04	1.990E-04	1.974E-04
Th-230	Th-230	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.795E-12	3.794E-12	3.791E-12	3.782E-12	3.750E-12
Th-230	Th-230	4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.194E-08	4.191E-08	4.181E-08	4.146E-08
Th-230	ΣS(j):		4.196E-08	4.196E-08	4.196E-08	4.196E-08	4.195E-08	4.191E-08	4.181E-08	4.146E-08
Ra-226	Th-230	4.196E-08	0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.229E-10	1.584E-09	3.678E-09	6.033E-09
Ra-226	Th-230	7.972E-16	0.000E+00	3.449E-19	1.032E-18	3.405E-18	9.935E-18	3.009E-17	6.989E-17	1.146E-16
Ra-226	U-234	4.196E-08	0.000E+00	8.340E-17	7.475E-16	8.188E-15	7.075E-14	6.828E-13	4.172E-12	1.438E-11
Ra-226	U-234	5.538E-14	0.000E+00	1.101E-22	9.868E-22	1.081E-20	9.339E-20	9.014E-19	5.506E-18	1.898E-17
Ra-226	U-234	7.972E-16	0.000E+00	1.585E-24	1.420E-23	1.556E-22	1.344E-21	1.297E-20	7.926E-20	2.732E-19
Ra-226	U-238	6.713E-11	0.000E+00	1.255E-25	3.374E-24	1.229E-22	3.166E-21	9.953E-20	1.701E-18	1.471E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.657E-31	4.453E-30	1.622E-28	4.179E-27	1.314E-25	2.246E-24	1.941E-23
Ra-226	U-238	1.276E-18	0.000E+00	2.385E-33	6.410E-32	2.335E-30	6.015E-29	1.891E-27	3.233E-26	2.794E-25
Ra-226	U-238	4.189E-08	0.000E+00	7.834E-23	2.105E-21	7.669E-20	1.975E-18	6.211E-17	1.062E-15	9.178E-15
Ra-226	U-238	5.530E-14	0.000E+00	1.034E-28	2.779E-27	1.012E-25	2.607E-24	8.198E-23	1.401E-21	1.211E-20
Ra-226	U-238	7.959E-16	0.000E+00	1.488E-30	4.000E-29	1.457E-27	3.753E-26	1.180E-24	2.017E-23	1.744E-22
Ra-226	ΣS(j):		0.000E+00	1.815E-11	5.430E-11	1.792E-10	5.230E-10	1.585E-09	3.683E-09	6.048E-09
Th-230	Th-230	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.538E-14	5.536E-14	5.532E-14	5.519E-14	5.473E-14
Th-230	Th-230	7.972E-16	7.972E-16	7.972E-16	7.972E-16	7.971E-16	7.969E-16	7.962E-16	7.943E-16	7.877E-16
Th-230	ΣS(j):		5.618E-14	5.618E-14	5.618E-14	5.618E-14	5.616E-14	5.611E-14	5.598E-14	5.551E-14
Ra-226	Th-230	5.538E-14	0.000E+00	2.396E-17	7.168E-17	2.366E-16	6.902E-16	2.091E-15	4.855E-15	7.964E-15
Th-230	Th-230	2.000E-07	2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.640E-13	2.639E-13	2.637E-13	2.631E-13	2.609E-13
Th-230	ΣS(j):		2.000E-07	2.000E-07	2.000E-07	2.000E-07	1.999E-07	1.998E-07	1.993E-07	1.976E-07
Th-230	Th-230	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.800E-15	3.799E-15	3.795E-15	3.786E-15	3.755E-15
U-234	U-234	9.996E-01	9.996E-01	9.963E-01	9.897E-01	9.669E-01	9.048E-01	7.171E-01	3.690E-01	3.607E-02
U-234	U-234	1.319E-06	1.319E-06	1.315E-06	1.306E-06	1.276E-06	1.194E-06	9.465E-07	4.871E-07	4.761E-08
U-234	U-238	1.599E-03	0.000E+00	4.501E-09	1.341E-08	4.368E-08	1.226E-07	3.240E-07	5.003E-07	1.632E-07
U-234	U-238	2.111E-09	0.000E+00	5.941E-15	1.770E-14	5.766E-14	1.619E-13	4.276E-13	6.604E-13	2.154E-13
U-234	U-238	3.039E-11	0.000E+00	8.551E-17	2.548E-16	8.299E-16	2.330E-15	6.155E-15	9.505E-15	3.100E-15
U-234	U-238	3.359E-07	0.000E+00	9.453E-13	2.817E-12	9.175E-12	2.576E-11	6.805E-11	1.051E-10	3.427E-11
U-234	U-238	4.434E-13	0.000E+00	1.248E-18	3.719E-18	1.211E-17	3.400E-17	8.982E-17	1.387E-16	4.524E-17
U-234	U-238	6.383E-15	0.000E+00	1.796E-20	5.353E-20	1.743E-19	4.894E-19	1.293E-18	1.997E-18	6.512E-19
U-234	U-238	3.196E-07	0.000E+00	8.994E-13	2.680E-12	8.729E-12	2.451E-11	6.474E-11	9.997E-11	3.261E-11
U-234	U-238	4.219E-13	0.000E+00	1.187E-18	3.538E-18	1.152E-17	3.235E-17	8.546E-17	1.320E-16	4.304E-17

Summary : Recreator (Indoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-238	6.073E-15	0.000E+00	1.709E-20	5.093E-20	1.659E-19	4.656E-19	1.230E-18	1.900E-18	6.195E-19
U-234	U-238	6.713E-11	0.000E+00	1.889E-16	5.630E-16	1.834E-15	5.147E-15	1.360E-14	2.100E-14	6.849E-15
U-234	U-238	8.862E-17	0.000E+00	2.494E-22	7.432E-22	2.420E-21	6.794E-21	1.795E-20	2.772E-20	9.040E-21
U-234	U-238	1.276E-18	0.000E+00	3.589E-24	1.070E-23	3.484E-23	9.780E-23	2.584E-22	3.990E-22	1.301E-22
U-234	U-238	3.200E-10	0.000E+00	9.005E-16	2.684E-15	8.740E-15	2.453E-14	6.482E-14	1.001E-13	3.265E-14
U-234	U-238	4.224E-16	0.000E+00	1.189E-21	3.542E-21	1.154E-20	3.239E-20	8.556E-20	1.321E-19	4.309E-20
U-234	U-238	6.080E-18	0.000E+00	1.711E-23	5.099E-23	1.661E-22	4.662E-22	1.232E-21	1.902E-21	6.203E-22
U-234	U-238	9.980E-01	0.000E+00	2.808E-06	8.369E-06	2.726E-05	7.652E-05	2.022E-04	3.122E-04	1.018E-04
U-234	U-238	1.317E-06	0.000E+00	3.707E-12	1.105E-11	3.598E-11	1.010E-10	2.668E-10	4.121E-10	1.344E-10
U-234	U-238	1.896E-08	0.000E+00	5.336E-14	1.590E-13	5.179E-13	1.454E-12	3.841E-12	5.931E-12	1.934E-12
U-234	U-238	2.096E-04	0.000E+00	5.899E-10	1.758E-09	5.725E-09	1.607E-08	4.246E-08	6.557E-08	2.139E-08
U-234	U-238	2.767E-10	0.000E+00	7.787E-16	2.320E-15	7.557E-15	2.122E-14	5.605E-14	8.655E-14	2.823E-14
U-234	U-238	3.983E-12	0.000E+00	1.121E-17	3.340E-17	1.088E-16	3.054E-16	8.068E-16	1.246E-15	4.063E-16
U-234	U-238	1.994E-04	0.000E+00	5.612E-10	1.673E-09	5.447E-09	1.529E-08	4.040E-08	6.238E-08	2.035E-08
U-234	U-238	2.633E-10	0.000E+00	7.408E-16	2.208E-15	7.190E-15	2.018E-14	5.333E-14	8.235E-14	2.686E-14
U-234	U-238	3.789E-12	0.000E+00	1.066E-17	3.178E-17	1.035E-16	2.905E-16	7.676E-16	1.185E-15	3.866E-16
U-234	U-238	4.189E-08	0.000E+00	1.179E-13	3.513E-13	1.144E-12	3.212E-12	8.486E-12	1.310E-11	4.274E-12
U-234	U-238	5.530E-14	0.000E+00	1.556E-19	4.637E-19	1.510E-18	4.240E-18	1.120E-17	1.730E-17	5.641E-18
U-234	U-238	7.959E-16	0.000E+00	2.240E-21	6.675E-21	2.174E-20	6.102E-20	1.612E-19	2.490E-19	8.120E-20
U-234	U-238	1.997E-07	0.000E+00	5.619E-13	1.675E-12	5.454E-12	1.531E-11	4.045E-11	6.246E-11	2.037E-11
U-234	U-238	2.636E-13	0.000E+00	7.417E-19	2.210E-18	7.199E-18	2.021E-17	5.339E-17	8.245E-17	2.689E-17
U-234	U-238	3.794E-15	0.000E+00	1.068E-20	3.182E-20	1.036E-19	2.909E-19	7.685E-19	1.187E-18	3.871E-19
U-234	ΣS(j):		9.996E-01	9.963E-01	9.897E-01	9.670E-01	9.049E-01	7.173E-01	3.693E-01	3.617E-02
U-234	U-234	1.899E-08	1.899E-08	1.893E-08	1.880E-08	1.837E-08	1.719E-08	1.362E-08	7.011E-09	6.853E-10
U-234	U-234	2.100E-04	2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.900E-04	1.506E-04	7.750E-05	7.576E-06
U-234	ΣS(j):		2.100E-04	2.093E-04	2.079E-04	2.031E-04	1.901E-04	1.506E-04	7.751E-05	7.576E-06
U-234	U-234	2.771E-10	2.771E-10	2.762E-10	2.744E-10	2.681E-10	2.509E-10	1.988E-10	1.023E-10	1.000E-11
U-234	U-234	3.989E-12	3.989E-12	3.976E-12	3.950E-12	3.859E-12	3.611E-12	2.862E-12	1.473E-12	1.439E-13
U-234	ΣS(j):		2.811E-10	2.802E-10	2.783E-10	2.719E-10	2.545E-10	2.017E-10	1.038E-10	1.014E-11
U-234	U-234	1.998E-04	1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	2.637E-10	2.637E-10	2.628E-10	2.611E-10	2.551E-10	2.387E-10	1.892E-10	9.733E-11	9.514E-12
U-234	ΣS(j):		1.998E-04	1.991E-04	1.978E-04	1.932E-04	1.808E-04	1.433E-04	7.374E-05	7.208E-06
U-234	U-234	3.795E-12	3.795E-12	3.783E-12	3.758E-12	3.671E-12	3.435E-12	2.723E-12	1.401E-12	1.369E-13
U-234	U-234	4.196E-08	4.196E-08	4.182E-08	4.154E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	ΣS(j):		4.196E-08	4.182E-08	4.155E-08	4.059E-08	3.798E-08	3.010E-08	1.549E-08	1.514E-09
U-234	U-234	5.538E-14	5.538E-14	5.520E-14	5.484E-14	5.357E-14	5.013E-14	3.973E-14	2.044E-14	1.998E-15
U-234	U-234	7.972E-16	7.972E-16	7.946E-16	7.893E-16	7.712E-16	7.216E-16	5.719E-16	2.943E-16	2.876E-17
U-234	ΣS(j):		5.618E-14	5.600E-14	5.562E-14	5.435E-14	5.085E-14	4.030E-14	2.074E-14	2.027E-15
U-234	U-234	2.000E-07	2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	2.640E-13	2.640E-13	2.631E-13	2.614E-13	2.554E-13	2.390E-13	1.894E-13	9.745E-14	9.526E-15
U-234	ΣS(j):		2.000E-07	1.993E-07	1.980E-07	1.935E-07	1.810E-07	1.435E-07	7.383E-08	7.216E-09
U-234	U-234	3.800E-15	3.800E-15	3.787E-15	3.762E-15	3.676E-15	3.440E-15	2.726E-15	1.403E-15	1.371E-16

Summary : Recreator (Indoor Worker)

File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\SITE16.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.450E-07	5.450E-07	5.432E-07	5.396E-07	5.272E-07	4.933E-07	3.911E-07	2.014E-07	1.972E-08
U-238	U-238	1.599E-03	1.599E-03	1.594E-03	1.583E-03	1.547E-03	1.448E-03	1.148E-03	5.909E-04	5.787E-05
U-238	ΣS(j):		1.600E-03	1.595E-03	1.584E-03	1.548E-03	1.448E-03	1.148E-03	5.911E-04	5.789E-05
U-238	U-238	2.111E-09	2.111E-09	2.104E-09	2.090E-09	2.042E-09	1.911E-09	1.515E-09	7.800E-10	7.639E-11
U-238	U-238	3.039E-11	3.039E-11	3.029E-11	3.009E-11	2.940E-11	2.751E-11	2.180E-11	1.123E-11	1.100E-12
U-238	ΣS(j):		2.142E-09	2.134E-09	2.120E-09	2.072E-09	1.939E-09	1.537E-09	7.912E-10	7.749E-11
U-238	U-238	3.359E-07	3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	4.434E-13	4.434E-13	4.420E-13	4.390E-13	4.290E-13	4.014E-13	3.182E-13	1.638E-13	1.605E-14
U-238	ΣS(j):		3.359E-07	3.348E-07	3.326E-07	3.250E-07	3.041E-07	2.410E-07	1.241E-07	1.216E-08
U-238	U-238	6.383E-15	6.383E-15	6.362E-15	6.319E-15	6.174E-15	5.778E-15	4.580E-15	2.358E-15	2.310E-16
U-238	U-238	3.196E-07	3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	ΣS(j):		3.196E-07	3.186E-07	3.164E-07	3.092E-07	2.893E-07	2.293E-07	1.181E-07	1.156E-08
U-238	U-238	4.219E-13	4.219E-13	4.205E-13	4.177E-13	4.081E-13	3.819E-13	3.027E-13	1.559E-13	1.527E-14
U-238	U-238	6.073E-15	6.073E-15	6.053E-15	6.012E-15	5.874E-15	5.497E-15	4.357E-15	2.244E-15	2.197E-16
U-238	ΣS(j):		4.280E-13	4.265E-13	4.237E-13	4.140E-13	3.874E-13	3.071E-13	1.581E-13	1.549E-14
U-238	U-238	6.713E-11	6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	8.862E-17	8.862E-17	8.832E-17	8.774E-17	8.572E-17	8.022E-17	6.359E-17	3.274E-17	3.206E-18
U-238	ΣS(j):		6.713E-11	6.691E-11	6.647E-11	6.494E-11	6.077E-11	4.817E-11	2.480E-11	2.429E-12
U-238	U-238	1.276E-18	1.276E-18	1.271E-18	1.263E-18	1.234E-18	1.155E-18	9.153E-19	4.712E-19	4.615E-20
U-238	U-238	3.200E-10	3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	ΣS(j):		3.200E-10	3.189E-10	3.168E-10	3.096E-10	2.897E-10	2.296E-10	1.182E-10	1.158E-11
U-238	U-238	4.224E-16	4.224E-16	4.210E-16	4.182E-16	4.086E-16	3.824E-16	3.031E-16	1.561E-16	1.528E-17
U-238	U-238	6.080E-18	6.080E-18	6.060E-18	6.020E-18	5.882E-18	5.504E-18	4.363E-18	2.246E-18	2.200E-19
U-238	ΣS(j):		4.285E-16	4.271E-16	4.242E-16	4.145E-16	3.879E-16	3.075E-16	1.583E-16	1.550E-17
U-238	U-238	9.980E-01	9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.317E-06	1.317E-06	1.313E-06	1.304E-06	1.274E-06	1.192E-06	9.453E-07	4.867E-07	4.767E-08
U-238	ΣS(j):		9.980E-01	9.947E-01	9.881E-01	9.654E-01	9.034E-01	7.161E-01	3.687E-01	3.611E-02
U-238	U-238	1.896E-08	1.896E-08	1.890E-08	1.877E-08	1.834E-08	1.716E-08	1.361E-08	7.005E-09	6.861E-10
U-238	U-238	2.096E-04	2.096E-04	2.089E-04	2.075E-04	2.028E-04	1.898E-04	1.504E-04	7.744E-05	7.585E-06
U-238	ΣS(j):		2.096E-04	2.089E-04	2.076E-04	2.028E-04	1.898E-04	1.504E-04	7.745E-05	7.586E-06
U-238	U-238	2.767E-10	2.767E-10	2.758E-10	2.740E-10	2.677E-10	2.505E-10	1.985E-10	1.022E-10	1.001E-11
U-238	U-238	3.983E-12	3.983E-12	3.970E-12	3.943E-12	3.853E-12	3.605E-12	2.858E-12	1.471E-12	1.441E-13
U-238	ΣS(j):		2.807E-10	2.798E-10	2.779E-10	2.715E-10	2.541E-10	2.014E-10	1.037E-10	1.016E-11
U-238	U-238	1.994E-04	1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	2.633E-10	2.633E-10	2.624E-10	2.607E-10	2.547E-10	2.383E-10	1.889E-10	9.726E-11	9.526E-12
U-238	ΣS(j):		1.994E-04	1.988E-04	1.975E-04	1.929E-04	1.805E-04	1.431E-04	7.368E-05	7.217E-06
U-238	U-238	3.789E-12	3.789E-12	3.777E-12	3.752E-12	3.666E-12	3.430E-12	2.719E-12	1.400E-12	1.371E-13

Summary : Recreator (Indoor Worker)

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	4.189E-08	4.189E-08	4.175E-08	4.148E-08	4.052E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	ΣS(j):		4.189E-08	4.176E-08	4.148E-08	4.053E-08	3.792E-08	3.006E-08	1.548E-08	1.516E-09
U-238	U-238	5.530E-14	5.530E-14	5.511E-14	5.475E-14	5.349E-14	5.006E-14	3.968E-14	2.043E-14	2.001E-15
U-238	U-238	7.959E-16	7.959E-16	7.933E-16	7.880E-16	7.699E-16	7.205E-16	5.711E-16	2.941E-16	2.880E-17
U-238	ΣS(j):		5.609E-14	5.591E-14	5.554E-14	5.426E-14	5.078E-14	4.025E-14	2.072E-14	2.030E-15
U-238	U-238	1.997E-07	1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	2.636E-13	2.636E-13	2.627E-13	2.610E-13	2.550E-13	2.386E-13	1.891E-13	9.738E-14	9.537E-15
U-238	ΣS(j):		1.997E-07	1.990E-07	1.977E-07	1.932E-07	1.808E-07	1.433E-07	7.377E-08	7.225E-09
U-238	U-238	3.794E-15	3.794E-15	3.781E-15	3.756E-15	3.670E-15	3.434E-15	2.722E-15	1.402E-15	1.373E-16

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 114.15 seconds

Total water/soil iteration failures = 4.100E+01.

APPENDIX 3
MARSSIM Guidance Applied TO AUM Sites

APPENDIX 3
MARSSIM GUIDANCE APPLIED TO AUM SITES

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1. PRELIMINARY ASSESSMENT/SCOPING SURVEY

The following is a detailed discussion of the science and assumptions made in association with the development of the procedures for the Preliminary Assessment. As previously stated, the Preliminary Assessment is equivalent to the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) Scoping Survey. Objectives of the Preliminary Assessment are to 1) identify impacted versus non-impacted areas of the mine property, and 2) subdivide impacted areas into Class 1, 2, or 3 Areas. By this classification, project resources can be efficiently applied to efforts which yield the desired results.

This assessment applies only to surface soil, and excludes assessment of buildings, structures, or equipment that may be present on the mine property and it excludes assessment of any groundwater or surface water that may be present.

1.1 NON- IMPACTED AREAS

Areas that have no reasonable potential for residual contamination are classified as non-impacted areas. These areas have no radiological impact from site operations and should be identified early in the Preliminary Assessment. A critical component of the definition of a non-impacted area is the reference to “reasonable potential” It is not required that radiation measurements be made to verify the absence of contamination from site activities. How the determination is made is site specific but could be made from historical documents, terrain conditions, or a critical inspection of site layout. At some abandoned uranium mine properties it may be possible to logically recognize large land areas where there is no potential for contamination. Once an area is identified as non-impacted, it may be considered as a potential background or reference location. During characterization and removal action activities which follow on the remainder of the site, every effort should be made to retain the non-impacted status of this area by preventing any vehicular traffic or wind/water borne transport which could cause contaminated material to be carried to this area.

1.2 IMPACTED AREAS

Areas with some potential for residual contamination are classified as impacted areas. Impacted areas are further divided into one of three classifications:

1.2.1 Class 3 Areas

This area has the potential for residual contamination, but at a level that is a small fraction of the cleanup level. Therefore it has a very small probability of residual contamination, but insufficient information to justify a non-impacted decision. The decision could be made on site operating history, and preliminary cursory radiation surveys. Obviously, Class 3 areas will be excluded from removal action consideration.

1.2.2 Class 2 Areas

These areas have a potential for radioactive contamination, or known contamination that is detectable above background, but is not expected to exceed the cleanup level. The data to make this determination should provide a high degree of confidence that no individual measurement would exceed the cleanup criteria. Class 2 areas would again be excluded from removal action consideration. The level of effort to make this determination would be greatest during the Characterization Survey which follows in Section 1.3, since as soon as a measurement exceeds the cleanup level the area immediately becomes a Class 1 area.

1.2.3 Class 1 Areas

Areas that have a potential for contamination, or known contamination, or were contaminated prior to being remediated, above the cleanup level are designated Class 1. Class 1 areas include any area where just a single measurement exceeds the cleanup level. Class 1 areas may not always require a removal action, as will be discussed later in this protocol. If the contamination above the cleanup level is not wide-spread, the risk from small isolated spots of contamination may not justify a removal action.

Once an area has been classified, every effort should be made during subsequent site activities to not spread contamination to a lower-level classified area. If the spread of contamination is suspected, the suspect area should be reclassified to the higher level until data can be collected to prove otherwise.

1.3 DATA TO BE COLLECTED DURING THE PRELIMINARY ASSESSMENT

The objective of this Preliminary Assessment is to differentiate impacted from non-impacted areas, to identify which impacted areas are designated as Class 1 or 2 areas and therefore will

require an Extent of Contamination/ Characterization survey, and which areas are to be considered as Class 3 areas. Class 3 areas will not be fully characterized by soil sampling, but will be included in the Final Status Survey protocol, as described in Section 3 of this Appendix.

In general, in-situ gamma measurements, as detailed below, are sufficient to classify areas. Soil sampling is not routinely required for classification, however at the discretion of the On-Scene Coordinator (OSC) a few samples may be collected to assist in the interpretation of gamma measurement data.

1.4 SCANNING

This section describes the screening/scanning protocol that will be conducted on the mine property within the defined area of interest. The defined area of interest may be the entire mine lease property, or a portion thereof. The procedures discussed below detail the scanning readings using gamma-sensitive field instruments methodologies.

1.4.1 Scanning using portable instruments

Scanning is an evaluation technique performed while continuously moving a radiation detector at a specified speed and distance above the surface. Count rate data are routinely collected at 2-second intervals, numerically converted to counts per minute (cpm), and tagged with Global Positioning System (GPS) coordinates using a global positioning system. Scanning surveys are performed to locate anomalies indicating residual gross activity that requires further investigation. Small areas of elevated activity typically represent a small portion of the site. Therefore, random or systematic stationary measurements or soil sampling on a grid pattern may have a low probability of identifying such small areas. Scanning surveys are often relatively quick and inexpensive to perform, and are often done before stationary measurements or sampling. In this way, unnecessary time is not spent fully evaluating an area that may prove to be contaminated above the investigation level during the scanning process.

(Note to readers, for the purposes of illustration, the following assumes a cleanup level of 2.0 picocuries per gram (pCi/g) above background. If this is not the selected cleanup level for a subject site, the action levels will need to be recalculated.)

It would be desirable to solely use gamma scanning data to identify which areas could be Class 3 areas and omitted from further characterization. Unfortunately, due to the very low cleanup level selected, this technique does not appear to have the required sensitivity to make this determination. MARSSIM table 6.7 specifies the scanning sensitivity for radium-226 (Ra-226) using a 2x2 sodium iodide (NaI) detector at 2.8 pCi/g, assuming a background count rate of 10,000 cpm. When scanning, MARSSIM recommends a minimum detectable concentration (MDC) of 50% of the desired sensitivity. Since the cleanup level for Ra-226 is 2.0 pCi/g above background, the desired sensitivity is 1.0 pCi/g above background. Assuming a background concentration of 1.0 pCi/g, the desired scanning sensitivity is 2.0 pCi/g inclusive of background, which is less than the 2.8 pCi/g sensitivity for this instrument listed in MARSSIM. Therefore, positive scanning data using the 2x2 detector are useful only to identify Class 1 and Class 2 areas. Negative scanning data may mean the sensitivity of the instrument is not adequate to meet the criteria. Scanning data may be useful for Class 3 areas if instruments with better sensitivity than the 2x2 are identified and used at the site.

The scanning investigation level used to signify a Class 1 area is calculated in the following manner. Using the Microshield software (gamma ray shielding and dose assessment modeling), the gamma exposure rate from widespread soil contamination at 2.0 pCi/g of Ra-226 is calculated to be 3.9 microRoentgens per hour ($\mu\text{R/h}$). MARSSIM table 6.7 referenced above also provides the response of a 2x2 NaI detector as 760 cpm/ $\mu\text{R/h}$ from Ra-226. Using this response factor, the expected response of the 2x2 NaI detector due to soil contamination of 2.0 pCi/g is 2,964 cpm. The cut-off level to designate a suspected Class 1 area is therefore determined to be 2,964 cpm above the applicable average background value for the property.

The lower cut-off level to designate a Class 2 area is the critical level, designated by L_C in section 6.7.1 of MARSSIM as follows; “The critical level is the level, in counts, at which there is a statistical probability (with a predetermined confidence) of incorrectly identifying a measurement system background value as greater than background. Any response above this level is considered to be greater than background.” Assuming a 5% error for both false negative and false positive errors, the equation for L_C is presented as:

$$L_C = 2.33 \sqrt{B}$$

where B is equal to the background counts over the measurement period. For example, assuming a background count rate of 10,000 cpm, the average counts detected during the 2-second accumulation period is 333 counts. Multiplying the square root of 333 by 2.33 arrives at an L_C of 42.5 counts per 2 seconds, or 1,275 cpm, above background. However, this calculated value assumes that the background count is affected only by statistics, and does not include the variation in count rate due to natural changes in soil concentration and effects of changing geometry on the detector. These naturally occurring variations cause the actual L_C to be greater than the value calculated under ideal conditions. Therefore, the L_C for the Preliminary Assessment will be determined empirically as the background count plus 3 times the standard deviation of the counts (not count rate) collected over the background or reference area. In summary, scanning measurements in Class 2 areas are expected to be greater than the L_C , and less than 2,964 cpm above background. If any individual scanning measurement is greater than 2,964 cpm above background, the area should be investigated further with consideration of reclassification to be a Class 1 area.

Class 3 areas will likely be the largest areas on the mine property, and will also likely exhibit significant relative variability in gamma count rate due to natural variation in soil mineralization. For example sandstone or granite outcroppings will likely exhibit a higher gamma count rate than sedimentary soil. Therefore, it is likely that multiple reference areas will be needed to calculate the appropriate L_C to account for this natural variation.

The density of gamma scanning coverage across the mine property will be based on a graded approach. During the assessment phase, Class 1 areas that are found to be contaminated above the DCGL and will undergo remediation need only have sufficient coverage to prove to the investigator that remediation is required. For some extremely contaminated sites, it can be proven that a cleanup is required with only a minimal amount of scanning. However, after cleanup has been conducted, Class 1 areas will have 100% coverage to verify that the cleanup goals were achieved. Assuming a detector field of view diameter of approximately 2 meters, scanning transects will be approximately 2 meters apart. Scanning speed will be at approximately 0.5 meters per second (m/s), and the detector will be placed in a fixture which holds the ground to detector distance constant at 15 inches (in). At this scanning speed, 100% coverage can be attained at a rate of 1 acre in approximately 67 minutes, assuming ideal conditions of flat terrain

and no obstacles. Class 2 areas will have 50% coverage with transects placed 4 meters apart. If the cpm trigger of 2,964 cpm above background is exceeded, the area will convert to 100% coverage. Class 3 areas will have 10% coverage with resulting transects placed 20 meters apart. However, visual triggers such as rock piles or drainage washes which may be an indicator of residual contamination in Class 3 areas will have a higher percentage of coverage. If the cpm trigger of L_C plus background is exceeded during a Class 3 scanning survey, the local area will convert to 50 % coverage.

1.4.2 Scanning with Multi-Detector Systems

Systems are available which use multiple detectors attached to a single vehicle or buggy. Such multi-detector systems can scan large areas more rapidly. However, care must be taken to insure that all detectors are kept at a constant height above ground.

1.5 STATIONARY GAMMA MEASUREMENTS

Another evaluation technique which is slower, but can achieve lower detection limits, is to collect stationary gamma readings above a fixed point. The count rate collected by this technique can be used to estimate the soil concentration within a reasonable field-of-view of the instrument, based upon a calculated correlation. This technique is not as accurate as actual soil sampling and analysis in a laboratory, but is sufficient to meet the goals of this assessment.

As described in Section 1.2, any positive scanning data collected are indicative of contamination sufficient to designate the area as either a Class 1 or 2 area. Class 1 areas exhibit a gamma scanning count rate greater 2,964 cpm (for this example), and Class 2 areas exhibit a count rate greater than the background average count rate plus three sigma. However, the absence of positive gamma scanning data does not mean the area is a Class 3 area. It may mean that the scanning sensitivity is not low enough to detect the cleanup level concentration. Therefore, stationary gamma measurements will be collected from all areas of the mine property that were not already designated Class 1 or Class 2 by the scanning survey. Stationary 1-minute gamma readings will be collected at a 15-inch elevation above the soil surface at defined intervals across the remainder of the defined area of interest on the mine site. Again assuming a detector field of view diameter of 2 meters, each 1-minute measurement would represent 3.14 square meters (m^2) of area. To achieve 5% coverage, approximately 65 measurements would be required per acre. If

scanning sensitivity is not an issue, one would still need to collect stationary measurements from Class 3 units and the number of measurement locations would be determined as indicated in Section 3.3 of this appendix.

As demonstrated previously in Section 1.4.1, stationary in-situ measurements will have a sensitivity of at least 2.0 pCi/g, inclusive of background for Ra-226, assuming an instrument background of 10,000 cpm and a cleanup level of 2.0 pCi/g. The minimum sensitivity of the detector is defined as the Detection Limit (L_D) and is calculated from the following formula from MARSSIM section 6.7.1:

$$L_D = 3 + 4.65\sqrt{B},$$

where B is the number of background counts during the period of accumulation. In this case, the MDC calculates to 468 counts, which is well below the calculated response of 2,964 counts resulting from exposure to a Ra-226 concentration of 2.0 pCi/g.

1.6 BACKGROUND OR REFERENCE AREA DETERMINATION

Areas that have no reasonable potential for residual contamination are classified as non-impacted areas. A reference area is selected essentially as a background against which readings at the mine site can be compared. The reference area is a non-impacted area representative of the mine area(s) with similar physical, biological, chemical, and radiological characteristics. Selection is made by gamma radiation level, soil concentration, geological formation, and other criteria specific to each property.

A critical component of the Preliminary Assessment is the collection of soil samples and gamma measurements which are indicative of natural background levels on the mine property. In cases where the property is small, the background level of radioactivity may be relatively uniform and one background area, or reference area, is adequate. However, on large sites, it is probable that several reference areas will need to be assessed due to the variability in natural radioactivity, and compared to appropriate Class 1, 2, and 3 areas. Therefore, large mine sites may have multiple reference areas. For this AUMSA protocol, this will require scanning of 100% of the soil surface in the reference area, collection of soil samples analyzed for Ra-226, and stationary 1-minute count rate readings above each sample measurement location. For sites that include residences or

other buildings, direct gamma exposure-rate measurements will also be collected. For sound statistical modeling, a minimum of 20 samples or measurements will be collected for each reference area.

2. CHARACTERIZATION/EXTENT OF CONTAMINATION SURVEYS

The objectives of the Characterization Survey are to 1) collect adequate data on which remedial action alternatives, designs, and costs can be based, and 2) collect data of sufficient quantity and quality that they can be used in the Final Status Survey for Class 1 and Class 2 Survey Units where a radiological threat abatement action is not warranted.

2.1 SOIL SAMPLING

The Characterization Surveys will be conducted following the protocols set forth in the MARSSIM guidelines, and summarized below.

2.1.1 Data for Remedial Design

Characterization surveys should include techniques to determine the lateral and vertical extent of radionuclide concentration in the surface and subsurface soil. This includes gamma scanning and stationary one-minute measurements of the soil surface, as discussed in the previous section, plus soil sampling and laboratory analyses. Subsurface soil samples should be collected where surface contamination is present and where subsurface contamination is known or suspected. Boreholes should be constructed to provide samples representing subsurface deposits, followed by gamma logging to help define the depth of contamination.

Contaminated areas that clearly require a radiological threat abatement action will likely be obvious by gamma measurements alone. For example, significantly elevated gamma scanning data are probably sufficient to delineate the area requiring soil removal. However, some soil samples may be needed to verify conclusions drawn by in-situ measurements.

In Class 1 areas where the gamma scanning data is near the cutoff level of 2,964 cpm above background, more soil samples are required to make a removal-action determination. In certain instances, as described below, Class 1 areas do not require an abatement action provided that the contamination level average is below the cleanup criterion with only a few small areas of activity above the investigation level. In this manner, Characterization Survey data can be used to document the final status of the area.

2.1.2 Final Status Sampling during Characterization Survey

2.1.2.1 Survey Units

MARSSIM defines a “survey unit” as a physical area of specified size and shape for which a separate decision will be made as to whether or not that area exceeds the release criterion. This decision is made as a result of a Final Status Survey (FSS), which describes the condition of the site after the removal action is complete. However, MARSSIM allows the use of data collected during the Characterization Survey to be used for the FSS for areas where:

- no remedial action occurred,
- there is no potential that nearby remedial action in other survey units caused a change in the contamination level of the area, and
- characterization data is of acceptable quality that it can be used in the statistical tests required by MARSSIM.

Survey Units are categorized as Class 1, 2, or 3 based on the same potential for radioactive contamination as discussed in section 1.2. Remediated areas are always identified as Class 1, even after the removal action, because the remediation process often results in less than 100% removal of the contamination. The contamination that remains after remediation is often associated with relatively small pockets of contaminated material, which results in a non-uniform distribution of activity and a Class 1 classification. Class 3 survey units, while they have little chance of containing activity above the release criterion, are still included in the FSS. The FSS of remediated Class 1 and Class 3 survey units is discussed in section 3.0.

Survey unit classes are also defined by the maximum area allowed for each. Surface land area Class 1 survey units are limited to 2000 m² or less, Class 2 survey units range from 2,000 to 10,000 m², and Class 3 survey units are unlimited in areal size.

2.1.2.2 Class 2 and Non-Remediated Class 1 FSS Data

Class 2 areas are, by definition, thought to contain residual contamination above the Critical Level L_c , but at concentrations less than the release criterion. Careful assessment of Class 2 areas during the Characterization Survey will generate data that can be included in the FSS.

Class 1 areas that have small pockets of contamination above the release criterion can be excluded from the removal action provided the risk from the small area added to the risk from the remaining area within the survey unit still meet the release criterion. MARSSIM addresses the concern for small areas of elevated activity by using a simple comparison to an investigation level as an alternative to statistical methods. MARSSIM describes this as the Elevated Measurement Comparison, or EMC. The use of the EMC is consistent with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) guidance for addressing limited areas that slightly exceed the action levels for a contaminated site.

2.1.2.3 Elevated Measurement Comparison

The EMC action level is calculated by modifying the cleanup criteria using a correction factor that accounts for the difference in area and the resulting change in risk. The area factor is the magnitude by which the concentration within the small area of elevated activity can exceed the cleanup criteria while maintaining compliance with the release criterion. This area factor correction is considered a defensible modification because the exposure assumptions are the same as those used to develop the cleanup level.

The following table provides examples of soil area risk factors for Ra-226. If the cleanup criterion is multiplied by the appropriate area factor, the resulting concentration distributed over the specified smaller area delivers the same calculated risk. For example, since the cleanup criterion for Ra-226 is 2.0 pCi/g (as described in Section 1.4.1 above) and the elevated concentration detected by scanning covers an area of 3 m², the EMC would be 2.0 pCi/g times 21.3 or approximately 43 pCi/g.

Table 2-1 Outdoor Area Dose Factor₁

Outdoor Area Factor for Radium-226 ²									
Area Size	1m ²	3 m ²	10 m ²	30 m ²	100 m ²	300 m ²	1,000 m ²	3,000 m ²	10,000 m ²
Factor	54.8	21.3	7.8	3.2	1.1	1.1	1.0	1.0	1.0

1 – Taken from MARSSIM, Table 5.6 (NRC, 2002)

If an area of contamination is found in addition to a low level of residual radioactivity distributed across the survey unit, the Unity Rule must be used to ensure that the total dose or risk meets the release criterion. The application of the Unity rule is presented in section 3.6.

2.1.2.4 Number and Type of Final Status Measurements

The minimum number of measurements to statistically define the extent or absence of contamination is more thoroughly discussed in section 3.3. In general, 13 to 20 Final Status measurements will be required for most survey units. Class 1 survey areas will be assessed by 100% scanning and soil sampling. Class 2 survey areas will be assessed by 50% scanning, and either soil sampling or stationary 1-minute gamma measurements, with a limited number of soil samples to investigate areas where the 1-minute stationary areas measurements are inconclusive. In both cases, the number of soil samples or stationary gamma measurements required to characterize the survey unit will follow the protocol described in section 3.3.

2.1.2.5 Soil Data Interpretation

Characterization data to be used as final status data for Class 2 areas and Class 1 areas where a removal action was not required will be interpreted using the same protocols described in the following section 3.0, Final Status Survey.

2.2 INDOOR SURVEYS

If residential homes or buildings are present on Class 1 Survey Units to be soil-remediated or on unremediated survey units where building materials were found to conceal potential contamination during previous surveys, the interior of the buildings will be assessed for elevated gamma readings, elevated “removable” alpha particles, and elevated radon levels. The indoor assessment should take into account the use of the building (i.e. occupational or residential) when determining total exposure of the occupants.

2.2.1 Gamma Exposure Rate

Class 1 Survey Units to be Soil-Remediated

If residential homes or buildings are present on Class 1 Survey Units that fail either the Wilcoxon Rank Sum (WRS) or Unity Rule tests defined in Section 3.0, the interior of the buildings will be assessed for elevated gamma readings and elevated “removable” alpha particles.

The exposure rate will be the average exposure rate across the 2 most-occupied, livable rooms within the structure (often the living room and a master bedroom), and will be measured using a Pressurized Ionization Chamber (PIC) located in the center of each room. A 2x2 NaI detector will be cross calibrated to the PIC in the home and used to survey for small areas of elevated count rate. The location of any anomalous count rates will be recorded, along with the estimated area of the elevated reading and the maximum exposure rate. If localized areas of elevated gamma exposure are detected, a 100 square centimeters (cm²) swipe or smear of the area will be collected and the analytical results compared to the 20 disintegrations per minute per 100 cm² (dpm/100 cm²) removable release standard for Ra-226 in NRC Regulatory Guide 1.86. Additionally, additional exposure rate measurements will be collected using the PIC in rooms where wipe samples are collected; the exposure rate for the residence/building will then be the average exposure across all PIC-measured rooms.

The exposure rate above background will be compared to the maximum allowable dose of 12 mrem/yr by the conversion factor of 1.5 Roentgen (R) = 1 rem. Houses and buildings with an indoor dose rate greater than 12 mrem/yr should be considered for structural-materials remediation. Upon remediation of soils, the outdoor dose can be calculated and added to the indoor dose (re-measured post-structural materials remediation, if applicable) and the total dose compared to 12 mrem/yr.

Non-Soil-Remediated Survey Units

If residential homes or buildings are present on non-remediated survey units and the building materials demonstrate potential contamination revealed during the preliminary and/or characterization survey, the interior of the buildings will also be assessed for elevated gamma readings and elevated “removable” alpha particles.

Continuing with the example of a soil cleanup criterion of 2.0 pCi/g and based on the PRG Calculator for a Residential (town) scenario and converting risk to dose, the dose rate from direct exposure to 2.0 pCi/g of Ra-226 equals 5.6 mrem/yr. Using Microshield® software, the exposure rate at 1 meter above an infinite plane of Ra-226 at 2.0 pCi/g is 3.9 µR/hr, or converting to dose rate 2.6 µrem/hr. The total dose received outdoors is then 2.6 µrem/hr x 1.752 hrs/day x 350 days/yr or 1.6 mrem/yr. The remainder of the dose (5.6 – 1.6), 4 mrem/yr, is

received indoors over a period of 16.416 hrs/day x 350 days/yr or 5,746 hours. The indoor dose rate is then 0.7 $\mu\text{rem/hr}$, or converting to exposure, 1.0 $\mu\text{R/hr}$. Therefore, if the outside soil is contaminated to a concentration equal to a cleanup level of 2.0 pCi/g, the allowable exposure rate indoors above background is 1 $\mu\text{R/hr}$. Houses and buildings with an indoor exposure rate greater than 1 $\mu\text{R/hr}$ above background, *in this example only*, should be considered for either soil or structural-materials remediation.

The exposure rate will be the average exposure rate across the 2 most-occupied, livable rooms within the structure (often the living room and a master bedroom), and will be measured using a Pressurized Ionization Chamber (PIC) located in the center of each room. A 2x2 NaI detector will be cross calibrated to the PIC in the home and used to survey for small areas of elevated count rate. The location of any anomalous count rates will be recorded, along with the estimated area of the elevated reading and the maximum exposure rate. If localized areas of elevated gamma exposure are detected, a 100 cm^2 swipe or smear of the area will be collected and the analytical results compared to the 20 dpm/100 cm^2 removable release standard for Ra-226 in NRC Regulatory Guide 1.86. Additionally, additional exposure rate measurements will be collected using the PIC in rooms where wipe samples are collected; the exposure rate for the residence/building will then be the average exposure across all PIC-measured rooms.

The selection of background and the collection of measurements for gamma exposure are described in Section 1.6 above. The United Nations Scientific Committee on Effects of Atomic Radiation (UNSCEAR) looked at the effects of materials of construction and concluded that the gamma radiation background is typically 20% higher in massive masonry houses in Europe relative to outside. It is reasonable to conclude that some of the construction materials and construction practices used in the uranium mining area (adobe, cinder block, mortar, or native rock used to construct thick walls) would cause a similar effect. For thick-walled buildings, the background should be increased by 20%.

2.2.2 Indoor Radon Concentration

All homes and buildings receiving an indoor survey will be sampled for indoor radon. The criteria to be applied will be the EPA standard of 4 picocuries per liter (pCi/L). A short-term test of at least 2 days duration will be conducted using either a charcoal canister, alpha track, or other

suitable technique to determine the concentration of Rn-222 for that short period. The detector will be placed in the lowest lived-in level of the structure, and the owner will be instructed to keep outside doors and windows closed during the test and for at least 12 hours before initiating the test.

3. FINAL STATUS SURVEY

Final Status Surveys are performed to demonstrate that residual radioactivity in each survey unit satisfies the release criterion. Final Status Surveys represent the fundamental elements for compliance demonstration using the statistical test described in section 3.2 below. The statistical test discussed in this section is used to compare each survey unit with an appropriately chosen, site-specific reference area.

A final status survey is done on each survey unit on the impacted area of the mine site, including all Class 1, 2, and 3 survey areas. Non-impacted areas do not require a Final Status Survey. Survey units were defined, including maximum areal sizes for each, in Section 2.1.2.1 above.

Data to be collected during the Final Status Survey include gamma scanning of the survey unit (all classes), collection of 1-minute stationary gamma measurements (Class 3 and possibly Class 2), and the collection of soil samples [Class 1 (remediated and non-remediated) and possibly Class 2]. Scanning is done to document that there are no small areas of elevated contamination remaining. Scanning is performed over 100% of Class 1 survey units (pre-removal), and either over 100% post-removal or, solely over the area(s) where removal activities occurred. Class 2 survey units receive 50% scanning coverage and Class 3 areas receive 10 % scanning coverage. As described in Sections 1.0 and 2.0 above, scanning and stationary measurement data collected during the Preliminary Assessment for Class 3 survey units and sample and stationary measurement data collected during the Characterization Survey for Class 1 non-remediated and Class 2 survey units can be used as Final Status Survey data. Soil sampling and stationary gamma measurements can be done on grid, random, and judgmental patterns.

3.1 PRELIMINARY EXAMINATION OF THE DATA

The types of measurements that can be made in a survey unit are direct gamma measurements at discrete locations, soil samples collected at discrete locations, and scanning surveys across broad areas. The statistical tests are applied only to soil samples or gamma measurements made at discrete locations. Scanning data are not evaluated using the statistical tests. However, both scans and measurements at discrete locations are subject to the EMC. The result of the EMC is not conclusive as to whether the survey unit meets or exceeds the release criterion, but is a flag or trigger for further investigation.

When data clearly show that a survey unit meets or exceeds the release criterion, the result is often obvious without performing the formal statistical analysis. The following table depicts circumstances that lead to conclusions based on a simple examination of the data.

Table 3-1. FSS Data Examination

Survey Result	Conclusion
Difference between largest survey unit measurement and smallest reference area measurement is less than the cleanup criterion	Survey unit meets release criterion, unless scan data indicates need for EMC
Difference of survey unit average and reference area average is greater than cleanup criterion	Survey unit does not meet release criterion
Difference between any survey unit measurement and any reference area measurement is greater than the cleanup criterion, and the difference between the survey unit average and the reference area average is less than the cleanup criterion	Conduct WRS test and elevated measurement comparison

3.2 WRS TEST

Since all of the radioisotopes of concern are also present in the reference area, the Wilcoxon Rank Sum (WRS) test, (also known as the Mann-Whitney test) will be used to compare concentrations in background to the concentrations observed on the mine site property. The WRS test is a two-sample test that compares the distribution of a set of measurements in a survey unit to that of a set of measurements in a reference area. The test is performed by adding the value of the cleanup criterion to each measurement in the reference area. The combined set of survey unit data and adjusted reference area data are listed, or ranked, in increasing numerical order. If the sum of the ranks of the adjusted reference site measurements exceed the sum of the ranks of the survey unit measurements by the “critical value”, the survey unit demonstrates compliance with the release criterion.

The simplest test is where an equal number of data points is available from the survey unit and the reference area. However, any combination of reference area and survey area data points can be assessed by the WRS test. The critical values for any combination of reference area and survey area data points are found in Table I.4 of MARSSIM. For this AUMSA, assume α is equal to 0.05, meaning the maximum probability of rejecting the null hypothesis (type I decision error) when it is true is 5%.

The WRS test applies only to uniform distributions of residual activity in a survey unit. Radioactive hot spots within in situ soils will be addressed using the Elevated Measurement Comparison method described in section 1.2.3. MARSSIM section 8.4 provides additional guidance regarding the application of the WRS test.

3.3 NUMBER OF DATA POINTS

Data points may be soil sample locations or 1-minute stationary gamma measurements. The number of data points is unrelated to whether the survey unit is Class 1, 2, or 3. However, the spatial distribution of the data points varies between the classes due to the maximum area allowed per survey unit class.

Parameters that impact the calculation of the minimum number of measurements are:

- the average concentration of contamination,
- the variability of the contamination, and
- the allowable type I and II decision errors.

It is not possible to know the exact number of data points required for each survey unit without prior knowledge of these parameters. However, generally 13 to 20 data points per survey unit are sufficient. Therefore, it is recommended that if by prior knowledge it is suspected that the survey unit is inhomogeneous, with an average concentration near the cleanup criteria, then 20 data points should be collected. If it is suspected that the survey unit has been remediated to a small fraction of the cleanup criteria and is relatively homogeneous, then 13 data points are probably sufficient.

Following collection of the final status stationary measurements or analysis of the soil samples, these data are used to determine if the required minimum number of data points was collected. MARSSIM defines the “shift” or “ Δ ” as the difference between the cleanup criterion and the average soil concentration or stationary gamma measurement. The “relative shift” is Δ divided by the standard deviation “ σ ” of the sample set, or Δ/σ . With type I and II decision errors set at 0.05 (5%) each, the minimum number of soil samples or stationary readings can be taken from MARSSIM Table 5.3. MARSSIM section 5.5.2.2 provides additional guidance as to the determination of the minimum number of data points for the conclusion drawn to be accurate.

3.4 SAMPLING OR STATIONARY MEASUREMENT GRID

Class 1 and Class 2 Final Status Survey samples and stationary measurements will be collected on either square or triangular sampling grids. The grids will be developed using Visual Sample Plan (VSP). According to MARSSIM section 5.5.2.5, Class 3 final status samples and stationary measurements (like reference areas) should be taken at random locations by generating sets of random numbers.

For Class 1 and Class 2 final survey units, the number of survey locations as determined in Section 6.3 above is used to determine the spacing of a systematic pattern by:

$$L = \sqrt{\frac{A}{n}} \text{ for a square grid, and } L = \sqrt{\frac{A}{0.866n}} \text{ for a triangular grid}$$

Where,

L = Spacing,

A = area of survey unit,

n = number of survey unit data points.

3.5 ELEVATED MEASUREMENT COMPARISON

A discussion of the EMC was presented in Section 1.2.3 above as it related to using characterization survey data to be used as FSS data for Class 1 areas where a removal action was not required. The EMC is also required of all Class 1 areas where a removal action was performed. The protocol for EMC will not be duplicated here, but should be included as an integral part of the FSS. The EMC protocol is not required for Class 2 or Class 3 survey units since for these survey units no data should have been collected that are greater than the cleanup criterion.

3.6 UNITY RULE TEST

The Unity Rule is an analytical technique whereby the ratio of the concentration of the small area of contamination to the EMC is added to the ratio of the residual average concentration of the property to the cleanup criterion. This summation of ratios must be equal to or less than one to pass the Unity Rule and thus demonstrate compliance with the release criterion.

3.7 CLASS 1 SURVEY UNITS OF LESS THAN 100 M²

In the event the scanning survey or an individual soil sample identifies an area of residual contamination smaller than 100 m², this small area may be considered as a separate Class 1 survey unit. The area will be bracketed within a square or rectangle, and five (5) judgmental soil samples collected from the small area. Sample orientation will be one sample from the middle and four from each surrounding quadrant. Clearance of judgmental sample results will be based on individual comparisons to the cleanup level plus background. If only one of the five samples located within the 100-m² area exceeds the cleanup level plus background, the clearance level will be based on the EMC. The area factor for the EMC is based on the area representing the single sample; if the sample result does not exceed the EMC, then the sample and hot spot area will be considered to meet the free-release criteria.

3.8 DATA INTERPRETATION

Data collected from each survey unit will be compared to one primary criteria - does the total risk, excluding the contribution from radon progeny, exceed a risk probability of 3×10^{-4} or 12 mrem/year. For survey units with a residential or work-place component, data will be compared to 2 additional criteria: 1) does the Rn-222 concentration in the dwelling exceed 4 pCi/l, and 2) do indoor wipe-sample results exceed the 20 dpm/100 cm² removable release standard for Ra-226. If any of the criteria are exceeded, the survey unit would be considered for action.

The radon criterion is relatively straightforward to assess. If the Rn-222 concentration exceeds 4 pCi/l, EPA recommends either a second short-term test, or a long-term (90 days) test to verify the measurement. If verification confirms the presence of elevated Rn-222, there are numerous abatement techniques that can be used to reduce the concentration. For example, radon from soil gas is the primary cause of elevated radon. Sealing cracks or gaps in floors, walls, construction joints, and service pipes may reduce the influx of radon into the home. Another source of indoor radon is from well water. Point of treatment can effectively remove radon from the home water supply before it enters the home. A vent pipe system and fan, also known as a soil suction radon reduction system, pulls radon from beneath the structure and vents it to the outside.

Evaluation of site data to the total risk criterion requires that a qualified health physicist review all of the site data and compare the actual site conditions to the assumptions that were used in

developing the PRG using the PRG Calculator. If actual site conditions are materially different than those assumed in the PRG calculator, a revised PRG will be calculated to which the site will be compared. Assuming actual site conditions are not materially different, the health physicist will estimate the total risk to the land-user based upon the average Ra-226 soil concentration outdoors, the summation of the contribution from localized elevated concentrations (hot spots) of Ra-226 outdoors, the external exposure rate indoors (where applicable), and any other contributors to the total risk which are identified during the survey.

3.9 SURVEY UNITS *WITH* SOIL SAMPLE AVERAGES USED FOR WRS TEST (CLASS 1 AND POSSIBLY CLASS 2)

To calculate the total risk probability from the average residual soil concentration, one simply multiplies the average residual soil concentration by the total risk per pCi/g [sum of risks from all COCs across all pathways (see Appendix A)] as calculated by the PRG calculator. For survey units whose indoor risk was calculated from direct exposure rate measurements with the PIC, the total risk per pCi/g can be re-calculated in the PRG Calculator to exclude risk ‘received’ indoors by changing the hours spent indoors per day to 0.0. In this manner, the indoor risk is not accounted for twice.

To calculate the Dose Equivalent (DE) in mrem/year from the average indoor exposure rate as measured by the PIC, divide the exposure rate by 1.5 to convert μR to μrem , and multiply the $\mu\text{rem}/\text{hour}$ by the number of occupancy hours (16.416 hrs/day x 350 days/yr for PRG residential scenario; 8 hrs/day x 250 days/yr for PRG indoor-worker scenario). The conversion factor from dose to risk is then 8.46×10^{-4} per rem of exposure per 30 years.

The Total Risk is calculated by the sum of the total from inside exposure (where applicable) and the total from the residual outside soil concentration.

3.10 SURVEY UNITS *WITHOUT* SOIL SAMPLE AVERAGES USED IN WRS (CLASS 3 AND POSSIBLY CLASS 2)

For Class 3 and Class 2 survey units where soil samples were not collected for use in the WRS test, the outdoor and indoor risk (where applicable) cannot be calculated individually. Instead, it is understood that total acceptable risk of 3×10^{-4} is not exceeded when the survey unit passes both the WRS test (using stationary gamma measurement data) and the Unity Rule. For survey units with a residential component where the indoor dose was measured directly, the indoor dose

shall also not exceed a cutoff level calculated per the example in Section 2.2.1 for non-soil remediated units. Similar survey units that *failed* either the WRS or Unity Rule test would be reclassified as Class 1 survey units, for which soil sample data is then collected for the WRS test post-remediation. The calculation of the Total Risk of these survey units is described immediately above.

If the Total Risk exceeds a risk probability of 3×10^{-4} , the health physicist will meet with the EPA OSC to recommend abatement or mitigating techniques which could reduce the TEDE to an acceptable level. Some examples of techniques that can be used during a removal action include the excavation of localized hot spots of elevated activity in the soil and the removal of contaminated building materials used in the home construction. Home-sites that have a TEDE above background but below 3×10^{-4} will be referred to the EPA Remedial Program and the appropriate state agency for any further actions deemed necessary.

APPENDIX B

EPA ERT AND WESTON STANDARD OPERATING PROCEDURES



GENERAL FIELD SAMPLING GUIDELINES

SOP#: 2001
DATE: 08/11/94
REV. #: 0.0

1.0 SCOPE AND APPLICATION

The purpose of this Standard Operating Procedure (SOP) is to provide general field sampling guidelines that will assist REAC personnel in choosing sampling strategies, location, and frequency for proper assessment of site characteristics. This SOP is applicable to all field activities that involve sampling.

These are standard (i.e., typically applicable) operating procedures which may be varied or changed as required, dependent on site conditions, equipment limitations or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U.S. EPA endorsement or recommendation for use.

2.0 METHOD SUMMARY

Sampling is the selection of a representative portion of a larger population, universe, or body. Through examination of a sample, the characteristics of the larger body from which the sample was drawn can be inferred. In this manner, sampling can be a valuable tool for determining the presence, type, and extent of contamination by hazardous substances in the environment.

The primary objective of all sampling activities is to characterize a hazardous waste site accurately so that its impact on human health and the environment can be properly evaluated. It is only through sampling and analysis that site hazards can be measured and the job of cleanup and restoration can be accomplished effectively with minimal risk. The sampling itself must be conducted so that every sample collected retains its original physical form and chemical composition. In this way, sample integrity is insured, quality assurance standards are maintained, and the sample can accurately represent the larger body of

material under investigation.

The extent to which valid inferences can be drawn from a sample depends on the degree to which the sampling effort conforms to the project's objectives. For example, as few as one sample may produce adequate, technically valid data to address the project's objectives. Meeting the project's objectives requires thorough planning of sampling activities, and implementation of the most appropriate sampling and analytical procedures. These issues will be discussed in this procedure.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

The amount of sample to be collected, and the proper sample container type (i.e., glass, plastic), chemical preservation, and storage requirements are dependent on the matrix being sampled and the parameter(s) of interest. Sample preservation, containers, handling, and storage for air and waste samples are discussed in the specific SOPs for air and waste sampling techniques.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

The nature of the object or materials being sampled may be a potential problem to the sampler. If a material is homogeneous, it will generally have a uniform composition throughout. In this case, any sample increment can be considered representative of the material. On the other hand, heterogeneous samples present problems to the sampler because of changes in the material over distance, both laterally and vertically.

Samples of hazardous materials may pose a safety threat to both field and laboratory personnel. Proper health and safety precautions should be implemented when handling this type of sample.

Environmental conditions, weather conditions, or non-target chemicals may cause problems and/or interferences when performing sampling activities or when sampling for a specific parameter. Refer to the specific SOPs for sampling techniques.

5.0 EQUIPMENT/APPARATUS

The equipment/apparatus required to collect samples must be determined on a site specific basis. Due to the wide variety of sampling equipment available, refer to the specific SOPs for sampling techniques which include lists of the equipment/apparatus required for sampling.

6.0 REAGENTS

Reagents may be utilized for preservation of samples and for decontamination of sampling equipment. The preservatives required are specified by the analysis to be performed. Decontamination solutions are specified in ERT SOP #2006, Sampling Equipment Decontamination.

7.0 PROCEDURE

7.1 Types of Samples

In relation to the media to be sampled, two basic types of samples can be considered: the environmental sample and the hazardous sample.

Environmental samples are those collected from streams, ponds, lakes, wells, and are off-site samples that are not expected to be contaminated with hazardous materials. They usually do not require the special handling procedures typically used for concentrated wastes. However, in certain instances, environmental samples can contain elevated concentrations of pollutants and in such cases would have to be handled as hazardous samples.

Hazardous or concentrated samples are those collected from drums, tanks, lagoons, pits, waste piles, fresh spills, or areas previously identified as contaminated, and require special handling procedures because of their potential toxicity or hazard. These samples can be further subdivided based on their degree of hazard; however, care should be taken when handling and shipping any wastes believed to be concentrated regardless of the degree.

The importance of making the distinction between environmental and hazardous samples is two-fold:

- (1) Personnel safety requirements: Any sample thought to contain enough hazardous materials to pose a safety threat should be designated as hazardous and handled in a manner which ensures the safety of both field and laboratory personnel.
- (2) Transportation requirements: Hazardous samples must be packaged, labeled, and shipped according to the International Air Transport Association (IATA) Dangerous Goods Regulations or Department of Transportation (DOT) regulations and U.S. EPA guidelines.

7.2 Sample Collection Techniques

In general, two basic types of sample collection techniques are recognized, both of which can be used for either environmental or hazardous samples.

Grab Samples

A grab sample is defined as a discrete aliquot representative of a specific location at a given point in time. The sample is collected all at once at one particular point in the sample medium. The representativeness of such samples is defined by the nature of the materials being sampled. In general, as sources vary over time and distance, the representativeness of grab samples will decrease.

Composite Samples

Composites are nondiscrete samples composed of more than one specific aliquot collected at various sampling locations and/or different points in time. Analysis of this type of sample produces an average value and can in certain instances be used as an alternative to analyzing a number of individual grab samples and calculating an average value. It should be noted, however, that compositing can mask problems by diluting isolated concentrations of some hazardous compounds below detection limits.

Compositing is often used for environmental samples and may be used for hazardous samples under certain conditions. For example, compositing of hazardous waste is often performed after compatibility tests have

been completed to determine an average value over a number of different locations (group of drums). This procedure generates data that can be useful by providing an average concentration within a number of units, can serve to keep analytical costs down, and can provide information useful to transporters and waste disposal operations.

For sampling situations involving hazardous wastes, grab sampling techniques are generally preferred because grab sampling minimizes the amount of time sampling personnel must be in contact with the wastes, reduces risks associated with compositing unknowns, and eliminates chemical changes that might occur due to compositing.

7.3 Types of Sampling Strategies

The number of samples that should be collected and analyzed depends on the objective of the investigation. There are three basic sampling strategies: random, systematic, and judgmental sampling.

Random sampling involves collection of samples in a nonsystematic fashion from the entire site or a specific portion of a site. Systematic sampling involves collection of samples based on a grid or a pattern which has been previously established. When judgmental sampling is performed, samples are collected only from the portion(s) of the site most likely to be contaminated. Often, a combination of these strategies is the best approach depending on the type of the suspected/known contamination, the uniformity and size of the site, the level/type of information desired, etc.

7.4 QA Work Plans (QAWP)

A QAWP is required when it becomes evident that a field investigation is necessary. It should be initiated in conjunction with, or immediately following, notification of the field investigation. This plan should be clear and concise and should detail the following basic components, with regard to sampling activities:

- C Objective and purpose of the investigation.
- C Basis upon which data will be evaluated.
- C Information known about the site including location, type and size of the facility, and length of operations/abandonment.
- C Type and volume of contaminated material, contaminants of concern (including

concentration), and basis of the information/data.

- C Technical approach including media/matrix to be sampled, sampling equipment to be used, sample equipment decontamination (if necessary), sampling design and rationale, and SOPs or description of the procedure to be implemented.
- C Project management and reporting, schedule, project organization and responsibilities, manpower and cost projections, and required deliverables.
- C QA objectives and protocols including tables summarizing field sampling and QA/QC analysis and objectives.

Note that this list of QAWP components is not all-inclusive and that additional elements may be added or altered depending on the specific requirements of the field investigation. It should also be recognized that although a detailed QAWP is quite important, it may be impractical in some instances. Emergency responses and accidental spills are prime examples of such instances where time might prohibit the development of site-specific QAWPs prior to field activities. In such cases, investigators would have to rely on general guidelines and personal judgment, and the sampling or response plans might simply be a strategy based on preliminary information and finalized on site. In any event, a plan of action should be developed, no matter how concise or informal, to aid investigators in maintaining a logical and consistent order to the implementation of their task.

7.5 Legal Implications

The data derived from sampling activities are often introduced as critical evidence during litigation of a hazardous waste site cleanup. Legal issues in which sampling data are important may include cleanup cost recovery, identification of pollution sources and responsible parties, and technical validation of remedial design methodologies. Because of the potential for involvement in legal actions, strict adherence to technical and administrative SOPs is essential during both the development and implementation of sampling activities.

Technically valid sampling begins with thorough planning and continues through the sample collection and analytical procedures. Administrative requirements involve thorough, accurate

documentation of all sampling activities. Documentation requirements include maintenance of a chain of custody, as well as accurate records of field activities and analytical instructions. Failure to observe these procedures fully and consistently may result in data that are questionable, invalid and non-defensible in court, and the consequent loss of enforcement proceedings.

8.0 CALCULATIONS

Refer to the specific SOPs for any calculations which are associated with sampling techniques.

9.0 QUALITY ASSURANCE/ QUALITY CONTROL

Refer to the specific SOPs for the type and frequency of QA/QC samples to be analyzed, the acceptance criteria for the QA/QC samples, and any other QA/QC activities which are associated with sampling techniques.

10.0 DATA VALIDATION

Refer to the specific SOPs for data validation activities that are associated with sampling techniques.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA, and corporate health and safety procedures.



SAMPLING EQUIPMENT DECONTAMINATION

SOP#: 2006
DATE: 08/11/94
REV. #: 0.0

1.0 SCOPE AND APPLICATION

The purpose of this Standard Operating Procedure (SOP) is to provide a description of the methods used for preventing, minimizing, or limiting cross-contamination of samples due to inappropriate or inadequate equipment decontamination and to provide general guidelines for developing decontamination procedures for sampling equipment to be used during hazardous waste operations as per 29 Code of Federal Regulations (CFR) 1910.120. This SOP does not address personnel decontamination.

These are standard (i.e. typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitation, or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U.S. Environmental Protection Agency (U.S. EPA) endorsement or recommendation for use.

2.0 METHOD SUMMARY

Removing or neutralizing contaminants from equipment minimizes the likelihood of sample cross contamination, reduces or eliminates transfer of contaminants to clean areas, and prevents the mixing of incompatible substances.

Gross contamination can be removed by physical decontamination procedures. These abrasive and non-abrasive methods include the use of brushes, air and wet blasting, and high and low pressure water cleaning.

The first step, a soap and water wash, removes all visible particulate matter and residual oils and grease. This may be preceded by a steam or high pressure

water wash to facilitate residuals removal. The second step involves a tap water rinse and a distilled/deionized water rinse to remove the detergent. An acid rinse provides a low pH media for trace metals removal and is included in the decontamination process if metal samples are to be collected. It is followed by another distilled/deionized water rinse. If sample analysis does not include metals, the acid rinse step can be omitted. Next, a high purity solvent rinse is performed for trace organics removal if organics are a concern at the site. Typical solvents used for removal of organic contaminants include acetone, hexane, or water. Acetone is typically chosen because it is an excellent solvent, miscible in water, and not a target analyte on the Priority Pollutant List. If acetone is known to be a contaminant of concern at a given site or if Target Compound List analysis (which includes acetone) is to be performed, another solvent may be substituted. The solvent must be allowed to evaporate completely and then a final distilled/deionized water rinse is performed. This rinse removes any residual traces of the solvent.

The decontamination procedure described above may be summarized as follows:

1. Physical removal
2. Non-phosphate detergent wash
3. Tap water rinse
4. Distilled/deionized water rinse
5. 10% nitric acid rinse
6. Distilled/deionized water rinse
7. Solvent rinse (pesticide grade)
8. Air dry
9. Distilled/deionized water rinse

If a particular contaminant fraction is not present at the site, the nine (9) step decontamination procedure specified above may be modified for site specificity. For example, the nitric acid rinse may be eliminated if metals are not of concern at a site. Similarly, the solvent rinse may be eliminated if organics are not of

concern at a site. Modifications to the standard procedure should be documented in the site specific work plan or subsequent report.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

The amount of sample to be collected and the proper sample container type (i.e., glass, plastic), chemical preservation, and storage requirements are dependent on the matrix being sampled and the parameter(s) of interest.

More specifically, sample collection and analysis of decontamination waste may be required before beginning proper disposal of decontamination liquids and solids generated at a site. This should be determined prior to initiation of site activities.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

- C The use of distilled/deionized water commonly available from commercial vendors may be acceptable for decontamination of sampling equipment provided that it has been verified by laboratory analysis to be analyte free (specifically for the contaminants of concern).
- C The use of an untreated potable water supply is not an acceptable substitute for tap water. Tap water may be used from any municipal or industrial water treatment system.
- C If acids or solvents are utilized in decontamination they raise health and safety, and waste disposal concerns.
- C Damage can be incurred by acid and solvent washing of complex and sophisticated sampling equipment.

5.0 EQUIPMENT/APPARATUS

Decontamination equipment, materials, and supplies are generally selected based on availability. Other considerations include the ease of decontaminating or disposing of the equipment. Most equipment and supplies can be easily procured. For example, soft-bristle scrub brushes or long-handled bottle brushes can be used to remove contaminants. Large galvanized wash tubs, stock tanks, or buckets can hold wash and rinse solutions. Children's wading pools can

also be used. Large plastic garbage cans or other similar containers lined with plastic bags can help segregate contaminated equipment. Contaminated liquid can be stored temporarily in metal or plastic cans or drums.

The following standard materials and equipment are recommended for decontamination activities:

5.1 Decontamination Solutions

- C Non-phosphate detergent
- C Selected solvents (acetone, hexane, nitric acid, etc.)
- C Tap water
- C Distilled or deionized water

5.2 Decontamination Tools/Supplies

- C Long and short handled brushes
- C Bottle brushes
- C Drop cloth/plastic sheeting
- C Paper towels
- C Plastic or galvanized tubs or buckets
- C Pressurized sprayers (H₂O)
- C Solvent sprayers
- C Aluminum foil

5.3 Health and Safety Equipment

Appropriate personal protective equipment (i.e., safety glasses or splash shield, appropriate gloves, aprons or coveralls, respirator, emergency eye wash)

5.4 Waste Disposal

- C Trash bags
- C Trash containers
- C 55-gallon drums
- C Metal/plastic buckets/containers for storage and disposal of decontamination solutions

6.0 REAGENTS

There are no reagents used in this procedure aside from the actual decontamination solutions. Table 1 (Appendix A) lists solvent rinses which may be required for elimination of particular chemicals. In general, the following solvents are typically utilized for decontamination purposes:

- C 10% nitric acid is typically used for inorganic compounds such as metals. An acid rinse may not be required if inorganics are not a contaminant of concern.
- C Acetone (pesticide grade)⁽¹⁾
- C Hexane (pesticide grade)⁽¹⁾
- C Methanol⁽¹⁾

⁽¹⁾ - Only if sample is to be analyzed for organics.

7.0 PROCEDURES

As part of the health and safety plan, a decontamination plan should be developed and reviewed. The decontamination line should be set up before any personnel or equipment enter the areas of potential exposure. The equipment decontamination plan should include:

- C The number, location, and layout of decontamination stations.
- C Decontamination equipment needed.
- C Appropriate decontamination methods.
- C Methods for disposal of contaminated clothing, equipment, and solutions.
- C Procedures can be established to minimize the potential for contamination. This may include: (1) work practices that minimize contact with potential contaminants; (2) using remote sampling techniques; (3) covering monitoring and sampling equipment with plastic, aluminum foil, or other protective material; (4) watering down dusty areas; (5) avoiding laying down equipment in areas of obvious contamination; and (6) use of disposable sampling equipment.

7.1 Decontamination Methods

All samples and equipment leaving the contaminated area of a site must be decontaminated to remove any contamination that may have adhered to equipment. Various decontamination methods will remove contaminants by: (1) flushing or other physical action, or (2) chemical complexing to inactivate contaminants by neutralization, chemical reaction, disinfection, or sterilization.

Physical decontamination techniques can be grouped into two categories: abrasive methods and non-abrasive methods, as follows:

7.1.1 Abrasive Cleaning Methods

Abrasive cleaning methods work by rubbing and wearing away the top layer of the surface containing the contaminant. The mechanical abrasive cleaning methods are most commonly used at hazardous waste sites. The following abrasive methods are available:

Mechanical

Mechanical methods of decontamination include using metal or nylon brushes. The amount and type of contaminants removed will vary with the hardness of bristles, length of time brushed, degree of brush contact, degree of contamination, nature of the surface being cleaned, and degree of contaminant adherence to the surface.

Air Blasting

Air blasting equipment uses compressed air to force abrasive material through a nozzle at high velocities. The distance between nozzle and surface cleaned, air pressure, time of application, and angle at which the abrasive strikes the surface will dictate cleaning efficiency. Disadvantages of this method are the inability to control the amount of material removed and the large amount of waste generated.

Wet Blasting

Wet blast cleaning involves use of a suspended fine abrasive. The abrasive/water mixture is delivered by compressed air to the contaminated area. By using a very fine abrasive, the amount of materials removed can be carefully controlled.

7.1.2 Non-Abrasive Cleaning Methods

Non-abrasive cleaning methods work by forcing the contaminant off a surface with pressure. In general, the equipment surface is not removed using non-abrasive methods.

Low-Pressure Water

This method consists of a container which is filled with water. The user pumps air out of the container to create a vacuum. A slender nozzle and hose allow the user to spray in hard-to-reach places.

High-Pressure Water

This method consists of a high-pressure pump, an operator controlled directional nozzle, and a high-pressure hose. Operating pressure usually ranges from 340 to 680 atmospheres (atm) and flow rates usually range from 20 to 140 liters per minute.

Ultra-High-Pressure Water

This system produces a water jet that is pressured from 1,000 to 4,000 atmospheres. This ultra-high-pressure spray can remove tightly-adhered surface films. The water velocity ranges from 500 meters/second (m/s) (1,000 atm) to 900 m/s (4,000 atm). Additives can be used to enhance the cleaning action.

Rinsing

Contaminants are removed by rinsing through dilution, physical attraction, and solubilization.

Damp Cloth Removal

In some instances, due to sensitive, non-waterproof equipment or due to the unlikelihood of equipment being contaminated, it is not necessary to conduct an extensive decontamination procedure. For example, air sampling pumps hooked on a fence, placed on a drum, or wrapped in plastic bags are not likely to become heavily contaminated. A damp cloth should be used to wipe off contaminants which may have adhered to equipment through airborne contaminants or from surfaces upon which the equipment was set.

Disinfection/Sterilization

Disinfectants are a practical means of inactivating infectious agents. Unfortunately, standard sterilization methods are impractical for large equipment. This method of decontamination is typically performed off-site.

7.2 Field Sampling Equipment Decontamination Procedures

The decontamination line is setup so that the first station is used to clean the most contaminated item. It progresses to the last station where the least contaminated item is cleaned. The spread of contaminants is further reduced by separating each

decontamination station by a minimum of three (3) feet. Ideally, the contamination should decrease as the equipment progresses from one station to another farther along in the line.

A site is typically divided up into the following boundaries: Hot Zone or Exclusion Zone (EZ), the Contamination Reduction Zone (CRZ), and the Support or Safe Zone (SZ). The decontamination line should be setup in the Contamination Reduction Corridor (CRC) which is in the CRZ. Figure 1 (Appendix B) shows a typical contaminant reduction zone layout. The CRC controls access into and out of the exclusion zone and confines decontamination activities to a limited area. The CRC boundaries should be conspicuously marked. The far end is the hotline, the boundary between the exclusion zone and the contamination reduction zone. The size of the decontamination corridor depends on the number of stations in the decontamination process, overall dimensions of the work zones, and amount of space available at the site. Whenever possible, it should be a straight line.

Anyone in the CRC should be wearing the level of protection designated for the decontamination crew. Another corridor may be required for the entry and exit of heavy equipment. Sampling and monitoring equipment and sampling supplies are all maintained outside of the CRC. Personnel don their equipment away from the CRC and enter the exclusion zone through a separate access control point at the hotline. One person (or more) dedicated to decontaminating equipment is recommended.

7.2.1 Decontamination Setup

Starting with the most contaminated station, the decontamination setup should be as follows:

Station 1: Segregate Equipment Drop

Place plastic sheeting on the ground (Figure 2, Appendix B). Size will depend on amount of equipment to be decontaminated. Provide containers lined with plastic if equipment is to be segregated. Segregation may be required if sensitive equipment or mildly contaminated equipment is used at the same time as equipment which is likely to be heavily contaminated.

Station 2: Physical Removal With A High-Pressure

Washer (Optional)

As indicated in 7.1.2, a high-pressure wash may be required for compounds which are difficult to remove by washing with brushes. The elevated temperature of the water from the high-pressure washers is excellent at removing greasy/oily compounds. High pressure washers require water and electricity.

A decontamination pad may be required for the high-pressure wash area. An example of a wash pad may consist of an approximately 1 1/2 foot-deep basin lined with plastic sheeting and sloped to a sump at one corner. A layer of sand can be placed over the plastic and the basin is filled with gravel or shell. The sump is also lined with visqueen and a barrel is placed in the hole to prevent collapse. A sump pump is used to remove the water from the sump for transfer into a drum.

Typically heavy machinery is decontaminated at the end of the day unless site sampling requires that the machinery be decontaminated frequently. A separate decontamination pad may be required for heavy equipment.

Station 3: Physical Removal With Brushes And A Wash Basin

Prior to setting up Station 3, place plastic sheeting on the ground to cover areas under Station 3 through Station 10.

Fill a wash basin, a large bucket, or child's swimming pool with non-phosphate detergent and tap water. Several bottle and bristle brushes to physically remove contamination should be dedicated to this station. Approximately 10 - 50 gallons of water may be required initially depending upon the amount of equipment to decontaminate and the amount of gross contamination.

Station 4: Water Basin

Fill a wash basin, a large bucket, or child's swimming pool with tap water. Several bottle and bristle brushes should be dedicated to this station. Approximately 10-50 gallons of water may be required initially depending upon the amount of equipment to decontaminate and the amount of gross contamination.

Station 5: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled/deionized water. Provide a 5-gallon bucket or basin to contain the water during the rinsing process. Approximately 10-20 gallons of water may be required initially depending upon the amount of equipment to be decontaminated and the amount of gross contamination.

Station 6: Nitric Acid Sprayers

Fill a spray bottle with 10% nitric acid. An acid rinse may not be required if inorganics are not a contaminant of concern. The amount of acid will depend on the amount of equipment to be decontaminated. Provide a 5-gallon bucket or basin to collect acid during the rinsing process.

Station 7: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled/deionized water. Provide a 5-gallon bucket or basin to collect water during the rinsate process.

Station 8: Organic Solvent Sprayers

Fill a spray bottle with an organic solvent. After each solvent rinse, the equipment should be rinsed with distilled/deionized water and air dried. Amount of solvent will depend on the amount of equipment to decontaminate. Provide a 5-gallon bucket or basin to collect the solvent during the rinsing process.

Solvent rinses may not be required unless organics are a contaminant of concern, and may be eliminated from the station sequence.

Station 9: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled/deionized water. Provide a 5-gallon bucket or basin to collect water during the rinsate process.

Station 10: Clean Equipment Drop

Lay a clean piece of plastic sheeting over the bottom plastic layer. This will allow easy removal of the plastic in the event that it becomes dirty. Provide aluminum foil, plastic, or other protective material to wrap clean equipment.

7.2.2 Decontamination Procedures

Station 1: Segregate Equipment Drop

Deposit equipment used on-site (i.e., tools, sampling devices and containers, monitoring instruments radios, clipboards, etc.) on the plastic drop cloth/sheet or in different containers with plastic liners. Each will be contaminated to a different degree. Segregation at the drop reduces the probability of cross contamination. Loose leaf sampling data sheets or maps can be placed in plastic zip lock bags if contamination is evident.

Station 2: Physical Removal With A High-Pressure Washer (Optional)

Use high pressure wash on grossly contaminated equipment. Do not use high- pressure wash on sensitive or non-waterproof equipment.

Station 3: Physical Removal With Brushes And A Wash Basin

Scrub equipment with soap and water using bottle and bristle brushes. Only sensitive equipment (i.e., radios, air monitoring and sampling equipment) which is waterproof should be washed. Equipment which is not waterproof should have plastic bags removed and wiped down with a damp cloth. Acids and organic rinses may also ruin sensitive equipment. Consult the manufacturers for recommended decontamination solutions.

Station 4: Equipment Rinse

Wash soap off of equipment with water by immersing the equipment in the water while brushing. Repeat as many times as necessary.

Station 5: Low-Pressure Rinse

Rinse sampling equipment with distilled/deionized water with a low-pressure sprayer.

Station 6: Nitric Acid Sprayers (required only if metals are a contaminant of concern)

Using a spray bottle rinse sampling equipment with nitric acid. Begin spraying (inside and outside) at one end of the equipment allowing the acid to drip to the other end into a 5-gallon bucket. A rinsate blank may be required at this station. Refer to Section 9.

Station 7: Low-Pressure Sprayers

Rinse sampling equipment with distilled/deionized water with a low-pressure sprayer.

Station 8: Organic Solvent Sprayers

Rinse sampling equipment with a solvent. Begin spraying (inside and outside) at one end of the equipment allowing the solvent to drip to the other end into a 5-gallon bucket. Allow the solvent to evaporate from the equipment before going to the next station. A QC rinsate sample may be required at this station.

Station 9: Low-Pressure Sprayers

Rinse sampling equipment with distilled/deionized water with a low-pressure washer.

Station 10 : Clean Equipment Drop

Lay clean equipment on plastic sheeting. Once air dried, wrap sampling equipment with aluminum foil, plastic, or other protective material.

7.2.3 Post Decontamination Procedures

1. Collect high-pressure pad and heavy equipment decontamination area liquid and waste and store in appropriate drum or container. A sump pump can aid in the collection process. Refer to the Department of Transportation (DOT) requirements for appropriate containers based on the contaminant of concern.
2. Collect high-pressure pad and heavy equipment decontamination area solid waste and store in appropriate drum or container. Refer to the DOT requirements for appropriate containers based on the contaminant of concern.
3. Empty soap and water liquid wastes from basins and buckets and store in appropriate drum or container. Refer to the DOT requirements for appropriate containers based on the contaminant of concern.
4. Empty acid rinse waste and place in appropriate container or neutralize with a base and place in appropriate drum. pH paper or an equivalent pH test is required for

neutralization. Consult DOT requirements for appropriate drum for acid rinse waste.

5. Empty solvent rinse sprayer and solvent waste into an appropriate container. Consult DOT requirements for appropriate drum for solvent rinse waste.
6. Using low-pressure sprayers, rinse basins, and brushes. Place liquid generated from this process into the wash water rinse container.
7. Empty low-pressure sprayer water onto the ground.
8. Place all solid waste materials generated from the decontamination area (i.e., gloves and plastic sheeting, etc.) in an approved DOT drum. Refer to the DOT requirements for appropriate containers based on the contaminant of concern.
9. Write appropriate labels for waste and make arrangements for disposal. Consult DOT regulations for the appropriate label for each drum generated from the decontamination process.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/ QUALITY CONTROL

A rinsate blank is one specific type of quality control sample associated with the field decontamination process. This sample will provide information on the effectiveness of the decontamination process employed in the field.

Rinsate blanks are samples obtained by running analyte free water over decontaminated sampling equipment to test for residual contamination. The blank water is collected in sample containers for handling, shipment, and analysis. These samples are treated identical to samples collected that day. A rinsate blank is used to assess cross contamination brought about by improper decontamination procedures. Where dedicated sampling equipment is

not utilized, collect one rinsate blank per day per type of sampling device samples to meet QA2 and QA3 objectives.

If sampling equipment requires the use of plastic tubing it should be disposed of as contaminated and replaced with clean tubing before additional sampling occurs.

10.0 DATA VALIDATION

Results of quality control samples will be evaluated for contamination. This information will be utilized to qualify the environmental sample results in accordance with the project's data quality objectives.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow OSHA, U.S. EPA, corporate, and other applicable health and safety procedures.

Decontamination can pose hazards under certain circumstances. Hazardous substances may be incompatible with decontamination materials. For example, the decontamination solution may react with contaminants to produce heat, explosion, or toxic products. Also, vapors from decontamination solutions may pose a direct health hazard to workers by inhalation, contact, fire, or explosion.

The decontamination solutions must be determined to be acceptable before use. Decontamination materials may degrade protective clothing or equipment; some solvents can permeate protective clothing. If decontamination materials do pose a health hazard, measures should be taken to protect personnel or substitutions should be made to eliminate the hazard. The choice of respiratory protection based on contaminants of concern from the site may not be appropriate for solvents used in the decontamination process.

Safety considerations should be addressed when using abrasive and non-abrasive decontamination equipment. Maximum air pressure produced by abrasive equipment could cause physical injury. Displaced material requires control mechanisms.

Material generated from decontamination activities requires proper handling, storage, and disposal. Personal Protective Equipment may be required for these activities.

Material safety data sheets are required for all decontamination solvents or solutions as required by the Hazard Communication Standard (i.e., acetone, alcohol, and trisodiumphosphate).

In some jurisdictions, phosphate containing detergents (i.e., TSP) are banned.

12.0 REFERENCES

Field Sampling Procedures Manual, New Jersey Department of Environmental Protection, February, 1988.

A Compendium of Superfund Field Operations Methods, EPA 540/p-87/001.

Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, USEPA Region IV, April 1, 1986.

Guidelines for the Selection of Chemical Protective Clothing, Volume 1, Third Edition, American Conference of Governmental Industrial Hygienists, Inc., February, 1987.

Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH/OSHA/USCG/EPA, October, 1985.

APPENDIX A

Table

Table 1. Soluble Contaminants and Recommended Solvent Rinse

TABLE 1 Soluble Contaminants and Recommended Solvent Rinse		
SOLVENT ⁽¹⁾	EXAMPLES OF SOLVENTS	SOLUBLE CONTAMINANTS
Water	Deionized water Tap water	Low-chain hydrocarbons Inorganic compounds Salts Some organic acids and other polar compounds
Dilute Acids	Nitric acid Acetic acid Boric acid	Basic (caustic) compounds (e.g., amines and hydrazines)
Dilute Bases	Sodium bicarbonate (e.g., soap detergent)	Acidic compounds Phenol Thiols Some nitro and sulfonic compounds
Organic Solvents ⁽²⁾	Alcohols Ethers Ketones Aromatics Straight chain alkalines (e.g., hexane) Common petroleum products (e.g., fuel, oil, kerosene)	Nonpolar compounds (e.g., some organic compounds)
Organic Solvent ⁽²⁾	Hexane	PCBs

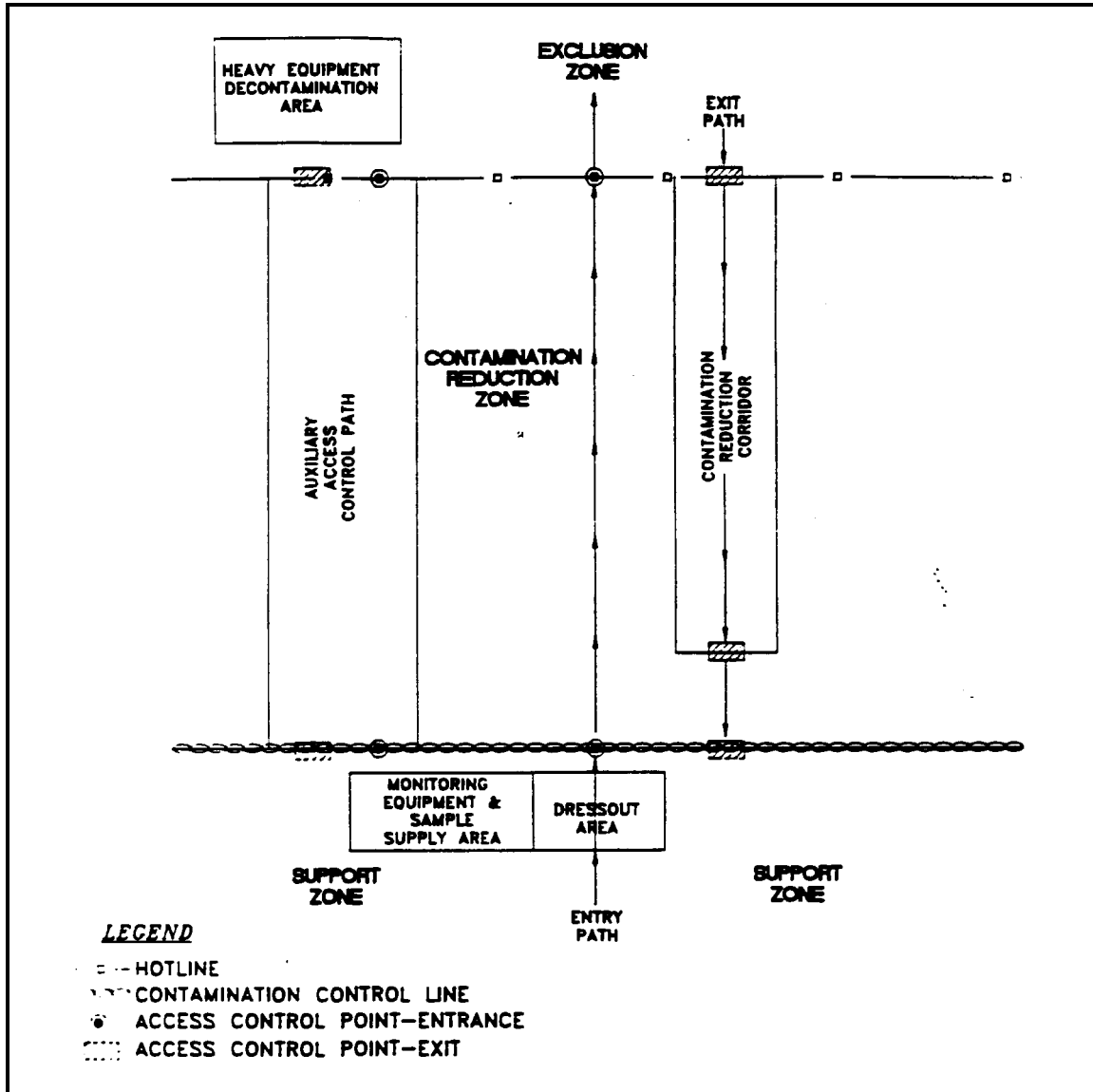
⁽¹⁾ - Material safety data sheets are required for all decontamination solvents or solutions as required by the Hazard Communication Standard

⁽²⁾ - WARNING: Some organic solvents can permeate and/or degrade the protective clothing

APPENDIX B

Figures

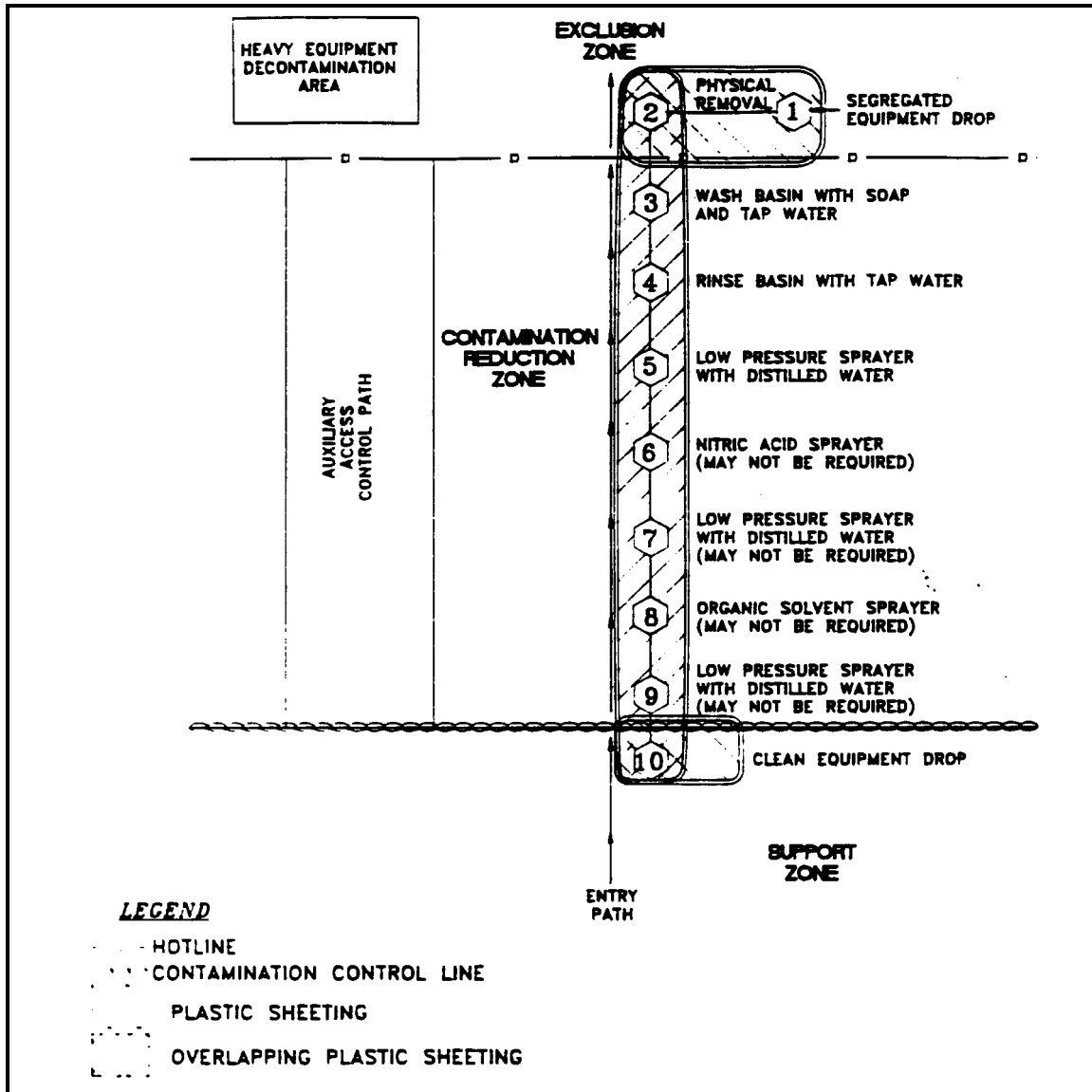
Figure 1. Contamination Reduction Zone Layout



APPENDIX B (Cont'd.)

Figures

Figure 2. Decontamination Layout



4.0 CHIP, WIPE, AND SWEEP SAMPLING: SOP #2011

4.1 SCOPE AND APPLICATION

This Standard Operating Procedure (SOP) outlines the recommended protocol and equipment for collection of representative chip, wipe, and sweep samples to monitor potential surficial contamination.

This method of sampling is appropriate for surfaces contaminated with non-volatile species of analytes (i.e., PCB, PCDD, PCDF, metals, cyanide, etc.) Detection limits are analyte specific. Sample size should be determined based upon the detection limit desired and the amount of sample requested by the analytical laboratory. Typical sample area is 1 square foot. However, based upon sampling location, the area may need modification due to area configuration.

4.2 METHOD SUMMARY

Since surface situations vary widely, no universal sampling method can be recommended. Rather, the method and implements used must be tailored to suit a specific sampling site. The sampling location should be selected based upon the potential for contamination as a result of manufacturing processes or personnel practices.

Chip sampling is appropriate for porous surfaces and is generally accomplished with either a hammer and chisel, or an electric hammer. The sampling device should be laboratory cleaned and wrapped in clean, autoclaved aluminum foil until ready for use. To collect the sample, a measured and marked off area is chipped both horizontally and vertically to an even depth of 1/8 inch. The sample is then transferred to the proper sample container.

Wipe samples are collected from smooth surfaces to indicate surficial contamination; a sample location is measured and marked off. Sampling personnel wear a new pair of surgical gloves to open a sterile gauze pad, and then soak it with solvent. The solvent used is dependent on the surface being sampled. This pad is then stroked firmly over the sample surface, first vertically, then horizontally, to ensure complete coverage. The pad is then transferred to the sample container.

Sweep sampling is an effective method for the collection of dust or residue on porous or non-porous surfaces. To collect such a sample, an appropriate area is measured off. Then, while wearing a new pair of disposable surgical gloves, sampling personnel use a dedicated brush to sweep material into a dedicated dust pan. The sample is then transferred to the proper sample container.

Samples collected by all three methods are sent to the laboratory for analysis.

4.3 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

Samples should be stored out of direct sunlight to reduce photodegradation and shipped on ice (4°C) to the laboratory performing the analysis. Appropriately-sized, laboratory-cleaned, glass sample jars should be used for sample collection. The amount of sample required is determined in concert with the analytical laboratory.

4.4 INTERFERENCES AND POTENTIAL PROBLEMS

This method has few significant interferences or problems. Typical problems result from rough porous surfaces which may be difficult to wipe, chip, or sweep.

4.5 EQUIPMENT/APPARATUS

- lab-clean sample containers of proper size and composition
- field and travel blanks
- site logbook
- sample analysis request forms
- chain of custody forms
- custody seals
- sample labels
- disposable surgical gloves
- sterile wrapped gauze pad (3 in. x 3 in.)
- appropriate pesticide (HPLC) grade solvent

- medium-sized, laboratory-cleaned paint brush
- medium-sized, laboratory-cleaned chisel
- autoclaved aluminum foil
- camera
- hexane (pesticide/HPLC grade)
- iso-octane
- distilled/deionized water

4.6 REAGENTS

Reagents are not required for preservation of chip, wipe or sweep samples. However, reagents will be utilized for decontamination of sampling equipment. Decontamination solutions are specified in ERT SOP #2006, Sampling Equipment Decontamination.

4.7 PROCEDURES

4.7.1 Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and the types and amounts of equipment and supplies needed.
2. Obtain necessary sampling and monitoring equipment.
3. Decontaminate or pre-clean equipment, and ensure that it is in working order.
4. Prepare scheduling and coordinate with staff, clients, and regulatory agencies, if appropriate.
5. Perform a general site survey prior to site entry in accordance with the site-specific health and safety plan.
6. Mark all sampling locations. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions.

4.7.2 Chip Sample Collection

Sampling of porous surfaces is generally accomplished by using a chisel and hammer or electric hammer. The sampling device should be laboratory cleaned or field decontaminated as per ERT SOP# 2006, Sampling Equipment Decontamination. It is then wrapped in cleaned,

autoclaved aluminum foil. The sampler should remain in this wrapping until it is needed. Each sampling device should be used for only one sample.

1. Choose appropriate sampling points; measure off the designated area and photo document.
2. To facilitate later calculations, record surface area to be chipped.
3. Don a new pair of disposable surgical gloves.
4. Open a laboratory-cleaned chisel or equivalent sampling device.
5. Chip the sample area horizontally, then vertically to an even depth of approximately 1/8 inch.
6. Place the sample in an appropriately-prepared sample container with a Teflon-lined cap.
7. Cap the sample container, attach the label and custody seal, and place in a double plastic bag. Record all pertinent data in the site logbook. Complete the sampling analysis request form and chain of custody form before taking the next sample.
8. Store samples out of direct sunlight and cool to 4°C.
9. Leave contaminated sampling device in the sampled material, unless decontamination is practical.
10. Follow proper decontamination procedures, then deliver sample(s) to the laboratory for analysis.

4.7.3 Wipe Sample Collection

Wipe sampling is accomplished by using a sterile gauze pad, adding a solvent in which the contaminant is most soluble, then wiping a pre-determined, pre-measured area. The sample is packaged in an amber jar to prevent photodegradation and packed in coolers for shipment to the lab. Each gauze pad is used for only one wipe sample.

1. Choose appropriate sampling points; measure off the designated area and photo document.

2. To facilitate later calculations, record surface area to be wiped.
3. Don a new pair of disposable surgical gloves.
4. Open new sterile package of gauze pad.
5. Soak the pad with the appropriate solvent.
6. Wipe the marked surface area using firm strokes. Wipe vertically, then horizontally to ensure complete surface coverage.
7. Place the gauze pad in an appropriately prepared sample container with a Teflon-lined cap.
8. Cap the sample container, attach the label and custody seal, and place in a double plastic bag. Record all pertinent data in the site logbook. Complete the sampling analysis request form and chain of custody form before taking the next sample.
9. Store samples out of direct sunlight and cool to 4°C.
10. Follow proper decontamination procedures, then deliver sample(s) to the laboratory for analysis.

4.7.4 Sweep Sample Collection

Sweep sampling is appropriate for bulk contamination. This procedure utilizes a dedicated, hand-held sweeper brush to acquire a sample from a pre-measured area.

1. Choose appropriate sampling points; measure off the designated area and photo document.
2. To facilitate later calculations, record the surface area to be swept.
3. Don a new pair of disposable surgical gloves.
4. Sweep the measured area using a dedicated brush; collect the sample in a dedicated dust pan.
5. Transfer sample from dust pan to sample container.
6. Cap the sample container, attach the label and

custody seal, and place in a double plastic bag. Record all pertinent data in the site logbook. Complete the sampling analysis request form and chain of custody form before taking the next sample.

7. Store samples out of direct sunlight and cool to 4°C.
8. Leave contaminated sampling device in the sample material, unless decontamination is practical.
9. Follow proper decontamination procedures, then deliver sample(s) to the laboratory for analysis.

4.8 CALCULATIONS

Results are usually provided in mg/g, $\mu\text{g/g}$ or another appropriate weight per unit weight measurement. Results may also be given in a mass per unit area.

4.9 QUALITY ASSURANCE/ QUALITY CONTROL

The following general quality assurance procedures apply:

- All data must be documented on standard chain of custody forms, field data sheets or within the site logbook.
- All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration activities must occur prior to sampling/operation, and they must be documented.

The following specific quality assurance activities apply to wipe samples:

- A blank should be collected for each sampling event. This consists of a sterile gauze pad, wet with the appropriate solvent, and placed in a prepared sample container. The blank will help identify potential introduction of contaminants via

the sampling methods, the pad, solvent or sample container.

- Spiked wipe samples can also be collected to better assess the data being generated. These are prepared by spiking a piece of foil of known area with a standard of the analyte of choice. The solvent containing the standard is allowed to evaporate, and the foil is wiped in a manner identical to the other wipe samples.

Specific quality assurance activities for chip and sweep samples should be determined on a site-specific basis.

4.10 DATA VALIDATION

Review the quality control samples and use the data to qualify the environmental results.

4.11 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA and specific health and safety procedures.



SOIL SAMPLING

SOP#: 2012
DATE: 11/16/94
REV. #: 0.0

1.0 SCOPE AND APPLICATION

The purpose of this standard operating procedure (SOP) is to describe the procedures for the collection of representative soil samples. Analysis of soil samples may determine whether concentrations of specific pollutants exceed established action levels, or if the concentrations of pollutants present a risk to public health, welfare, or the environment.

These are standard (i.e., typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitations or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U.S. Environmental Protection Agency (EPA) endorsement or recommendation for use.

2.0 METHOD SUMMARY

Soil samples may be collected using a variety of methods and equipment. The methods and equipment used are dependent on the depth of the desired sample, the type of sample required (disturbed vs. undisturbed), and the soil type. Near-surface soils may be easily sampled using a spade, trowel, and scoop. Sampling at greater depths may be performed using a hand auger, continuous flight auger, a trier, a split-spoon, or, if required, a backhoe.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

Chemical preservation of solids is not generally recommended. Samples should, however, be cooled and protected from sunlight to minimize any potential reaction.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

There are two primary interferences or potential problems associated with soil sampling. These include cross contamination of samples and improper sample collection. Cross contamination problems can be eliminated or minimized through the use of dedicated sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Improper sample collection can involve using contaminated equipment, disturbance of the matrix resulting in compaction of the sample or inadequate homogenization of the samples where required, resulting in variable, non-representative results.

5.0 EQUIPMENT/APPARATUS

Soil sampling equipment includes the following:

- C Sampling plan
- C Maps/plot plan
- C Safety equipment, as specified in the Health and Safety Plan
- C Survey equipment
- C Tape measure
- C Survey stakes or flags
- C Camera and film
- C Stainless steel, plastic, or other appropriate homogenization bucket, bowl or pan
- C Appropriate size sample containers
- C Ziplock plastic bags
- C Logbook
- C Labels
- C Chain of Custody records and seals
- C Field data sheets
- C Cooler(s)
- C Ice
- C Vermiculite
- C Decontamination supplies/equipment
- C Canvas or plastic sheet
- C Spade or shovel

- C Spatula
- C Scoop
- C Plastic or stainless steel spoons
- C Trowel
- C Continuous flight (screw) auger
- C Bucket auger
- C Post hole auger
- C Extension rods
- C T-handle
- C Sampling trier
- C Thin wall tube sampler
- C Split spoons
- C Vehimeyer soil sampler outfit
 - Tubes
 - Points
 - Drive head
 - Drop hammer
 - Puller jack and grip
- C Backhoe

6.0 REAGENTS

Reagents are not used for the preservation of soil samples. Decontamination solutions are specified in the Sampling Equipment Decontamination SOP and the site specific work plan.

7.0 PROCEDURES

7.1 Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and the types and amounts of equipment and supplies required.
2. Obtain necessary sampling and monitoring equipment.
3. Decontaminate or pre-clean equipment, and ensure that it is in working order.
4. Prepare schedules, and coordinate with staff, client, and regulatory agencies, if appropriate.
5. Perform a general site survey prior to site entry in accordance with the site specific Health and Safety Plan.
6. Use stakes, flagging, or buoys to identify and mark all sampling locations. Specific site

factors, including extent and nature of contaminant should be considered when selecting sample location. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions. All staked locations will be utility-cleared by the property owner prior to soil sampling.

7.2 Sample Collection

7.2.1 Surface Soil Samples

Collection of samples from near-surface soil can be accomplished with tools such as spades, shovels, trowels, and scoops. Surface material can be removed to the required depth with this equipment, then a stainless steel or plastic scoop can be used to collect the sample.

This method can be used in most soil types but is limited to sampling near surface areas. Accurate, representative samples can be collected with this procedure depending on the care and precision demonstrated by the sample team member. A stainless steel scoop, lab spoon, or plastic spoon will suffice in most other applications. The use of a flat, pointed mason trowel to cut a block of the desired soil can be helpful when undisturbed profiles are required. Care should be exercised to avoid use of devices plated with chrome or other materials. Plating is particularly common with garden implements such as potting trowels.

The following procedure is used to collect surface soil samples:

1. Carefully remove the top layer of soil or debris to the desired sample depth with a pre-cleaned spade.
2. Using a pre-cleaned, stainless steel scoop, plastic spoon, or trowel, remove and discard a thin layer of soil from the area which came in contact with the spade.
3. If volatile organic analysis is to be performed, transfer the sample directly into an appropriate, labeled sample container with a stainless steel lab spoon, or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or

other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval or location into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.

7.2.2 Sampling at Depth with Augers and Thin Wall Tube Samplers

This system consists of an auger, or a thin-wall tube sampler, a series of extensions, and a "T" handle (Figure 1, Appendix A). The auger is used to bore a hole to a desired sampling depth, and is then withdrawn. The sample may be collected directly from the auger. If a core sample is to be collected, the auger tip is then replaced with a thin wall tube sampler. The system is then lowered down the borehole, and driven into the soil to the completion depth. The system is withdrawn and the core is collected from the thin wall tube sampler.

Several types of augers are available; these include: bucket type, continuous flight (screw), and post-hole augers. Bucket type augers are better for direct sample recovery since they provide a large volume of sample in a short time. When continuous flight augers are used, the sample can be collected directly from the flights. The continuous flight augers are satisfactory for use when a composite of the complete soil column is desired. Post-hole augers have limited utility for sample collection as they are designed to cut through fibrous, rooted, swampy soil and cannot be used below a depth of three feet.

The following procedure will be used for collecting soil samples with the auger:

1. Attach the auger bit to a drill rod extension, and attach the "T" handle to the drill rod.
2. Clear the area to be sampled of any surface debris (e.g., twigs, rocks, litter). It may be advisable to remove the first three to six inches of surface soil for an area approximately six inches in radius around the

drilling location.

3. Begin augering, periodically removing and depositing accumulated soils onto a plastic sheet spread near the hole. This prevents accidental brushing of loose material back down the borehole when removing the auger or adding drill rods. It also facilitates refilling the hole, and avoids possible contamination of the surrounding area.
4. After reaching the desired depth, slowly and carefully remove the auger from boring. When sampling directly from the auger, collect the sample after the auger is removed from the boring and proceed to Step 10.
5. Remove auger tip from drill rods and replace with a pre-cleaned thin wall tube sampler. Install the proper cutting tip.
6. Carefully lower the tube sampler down the borehole. Gradually force the tube sampler into soil. Care should be taken to avoid scraping the borehole sides. Avoid hammering the drill rods to facilitate coring as the vibrations may cause the boring walls to collapse.
7. Remove the tube sampler, and unscrew the drill rods.
8. Remove the cutting tip and the core from the device.
9. Discard the top of the core (approximately 1 inch), as this possibly represents material collected before penetration of the layer of concern. Place the remaining core into the appropriate labeled sample container. Sample homogenization is not required.
10. If volatile organic analysis is to be performed, transfer the sample into an appropriate, labeled sample container with a stainless steel lab spoon, or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the

caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly.

When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.

11. If another sample is to be collected in the same hole, but at a greater depth, reattach the auger bit to the drill and assembly, and follow steps 3 through 11, making sure to decontaminate the auger and tube sampler between samples.
12. Abandon the hole according to applicable State regulations. Generally, shallow holes can simply be backfilled with the removed soil material.

7.2.3 Sampling at Depth with a Trier

The system consists of a trier, and a "T" handle. The auger is driven into the soil to be sampled and used to extract a core sample from the appropriate depth.

The following procedure will be used to collect soil samples with a sampling trier:

1. Insert the trier (Figure 2, Appendix A) into the material to be sampled at a 0° to 45° angle from horizontal. This orientation minimizes the spillage of sample.
2. Rotate the trier once or twice to cut a core of material.
3. Slowly withdraw the trier, making sure that the slot is facing upward.
4. If volatile organic analysis is to be performed, transfer the sample into an appropriate, labeled sample container with a stainless steel lab spoon, or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the

caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.

7.2.4 Sampling at Depth with a Split Spoon (Barrel) Sampler

The procedure for split spoon sampling describes the collection and extraction of undisturbed soil cores of 18 or 24 inches in length. A series of consecutive cores may be extracted with a split spoon sampler to give a complete soil column profile, or an auger may be used to drill down to the desired depth for sampling. The split spoon is then driven to its sampling depth through the bottom of the augured hole and the core extracted.

When split spoon sampling is performed to gain geologic information, all work should be performed in accordance with ASTM D 1586-67 (reapproved 1974).

The following procedures will be used for collecting soil samples with a split spoon:

1. Assemble the sampler by aligning both sides of barrel and then screwing the drive shoe on the bottom and the head piece on top.
2. Place the sampler in a perpendicular position on the sample material.
3. Using a well ring, drive the tube. Do not drive past the bottom of the head piece or compression of the sample will result.
4. Record in the site logbook or on field data sheets the length of the tube used to penetrate the material being sampled, and the number of blows required to obtain this depth.
5. Withdraw the sampler, and open by unscrewing the bit and head and splitting the barrel. The amount of recovery and soil type should be recorded on the boring log. If a split sample is desired, a cleaned, stainless steel knife should be used to divide the tube contents in half, longitudinally. This sampler

is typically available in 2 and 3 1/2 inch diameters. However, in order to obtain the required sample volume, use of a larger barrel may be required.

6. Without disturbing the core, transfer it to appropriate labeled sample container(s) and seal tightly.

7.2.5 Test Pit/Trench Excavation

These relatively large excavations are used to remove sections of soil, when detailed examination of soil characteristics (horizontal, structure, color, etc.) are required. It is the least cost effective sampling method due to the relatively high cost of backhoe operation.

The following procedures will be used for collecting soil samples from test pit/trench excavations:

1. Prior to any excavation with a backhoe, it is important to ensure that all sampling locations are clear of utility lines, subsurface pipes and poles (subsurface as well as above surface).
2. Using the backhoe, a trench is dug to approximately three feet in width and approximately one foot below the cleared sampling location. Place excavated soils on plastic sheets. Trenches greater than five feet deep must be sloped or protected by a shoring system, as required by OSHA regulations.
3. A shovel is used to remove a one to two inch layer of soil from the vertical face of the pit where sampling is to be done.
4. Samples are taken using a trowel, scoop, or coring device at the desired intervals. Be sure to scrape the vertical face at the point of sampling to remove any soil that may have fallen from above, and to expose fresh soil for sampling. In many instances, samples can be collected directly from the backhoe bucket.
5. If volatile organic analysis is to be performed, transfer the sample into an appropriate, labeled sample container with a

stainless steel lab spoon, or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.

6. Abandon the pit or excavation according to applicable state regulations. Generally, shallow excavations can simply be backfilled with the removed soil material.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/ QUALITY CONTROL

There are no specific quality assurance (QA) activities which apply to the implementation of these procedures. However, the following QA procedures apply:

1. All data must be documented on field data sheets or within site logbooks.
2. All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration activities must occur prior to sampling/operation, and they must be documented.

10.0 DATA VALIDATION

This section is not applicable to this SOP.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials,

follow U.S. EPA, OHSA and corporate health and safety procedures.

12.0 REFERENCES

Mason, B.J., Preparation of Soil Sampling Protocol: Technique and Strategies. 1983 EPA-600/4-83-020.

Barth, D.S. and B.J. Mason, Soil Sampling Quality Assurance User's Guide. 1984 EPA-600/4-84-043.

U.S. EPA. Characterization of Hazardous Waste Sites - A Methods Manual: Volume II. Available Sampling Methods, Second Edition. 1984 EPA-600/4-84-076.

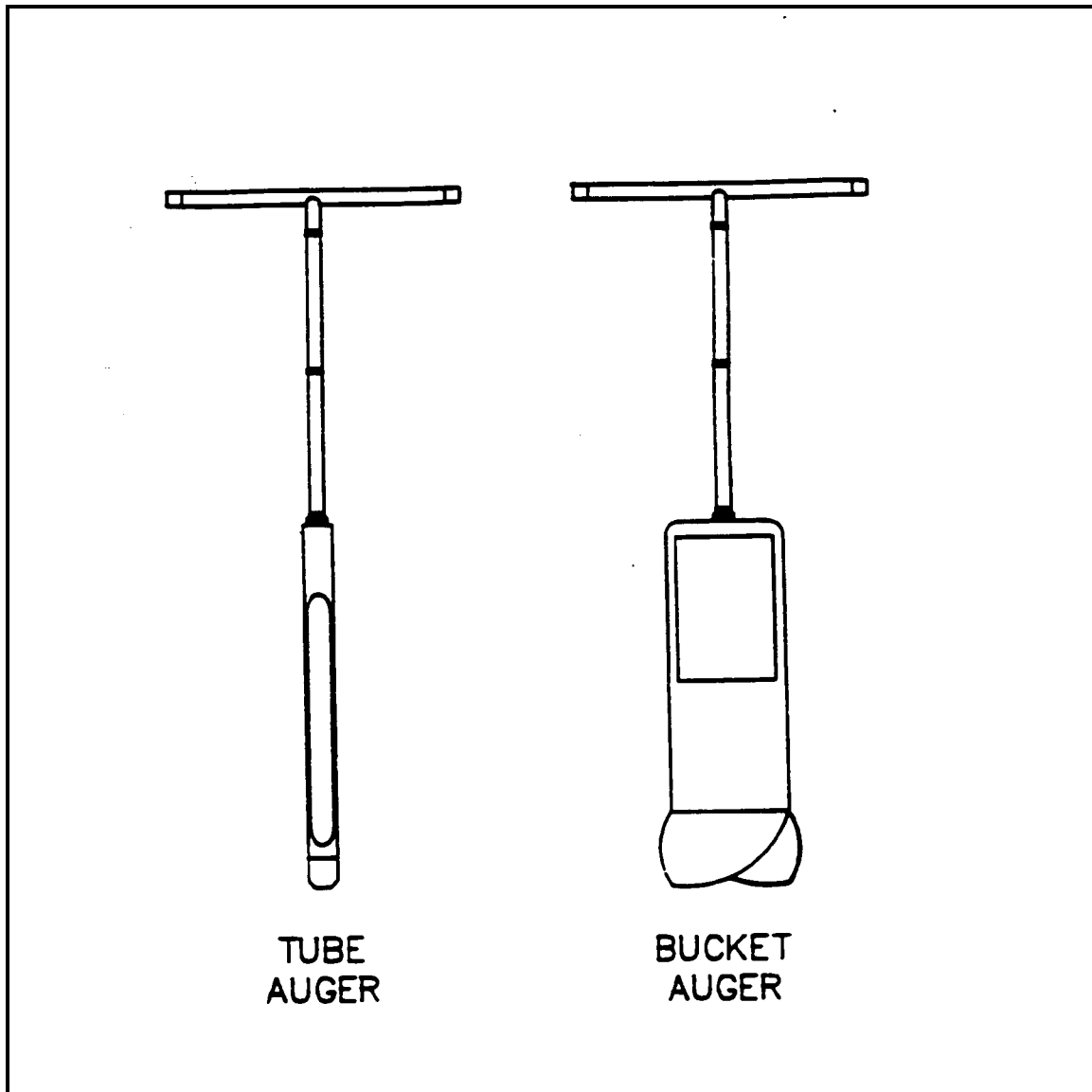
de Vera, E.R., B.P. Simmons, R.D. Stephen, and D.L. Storm. Samplers and Sampling Procedures for Hazardous Waste Streams. 1980 EPA-600/2-80-018.

ASTM D 1586-67 (reapproved 1974), ASTM Committee on Standards, Philadelphia, PA.

APPENDIX A

Figures

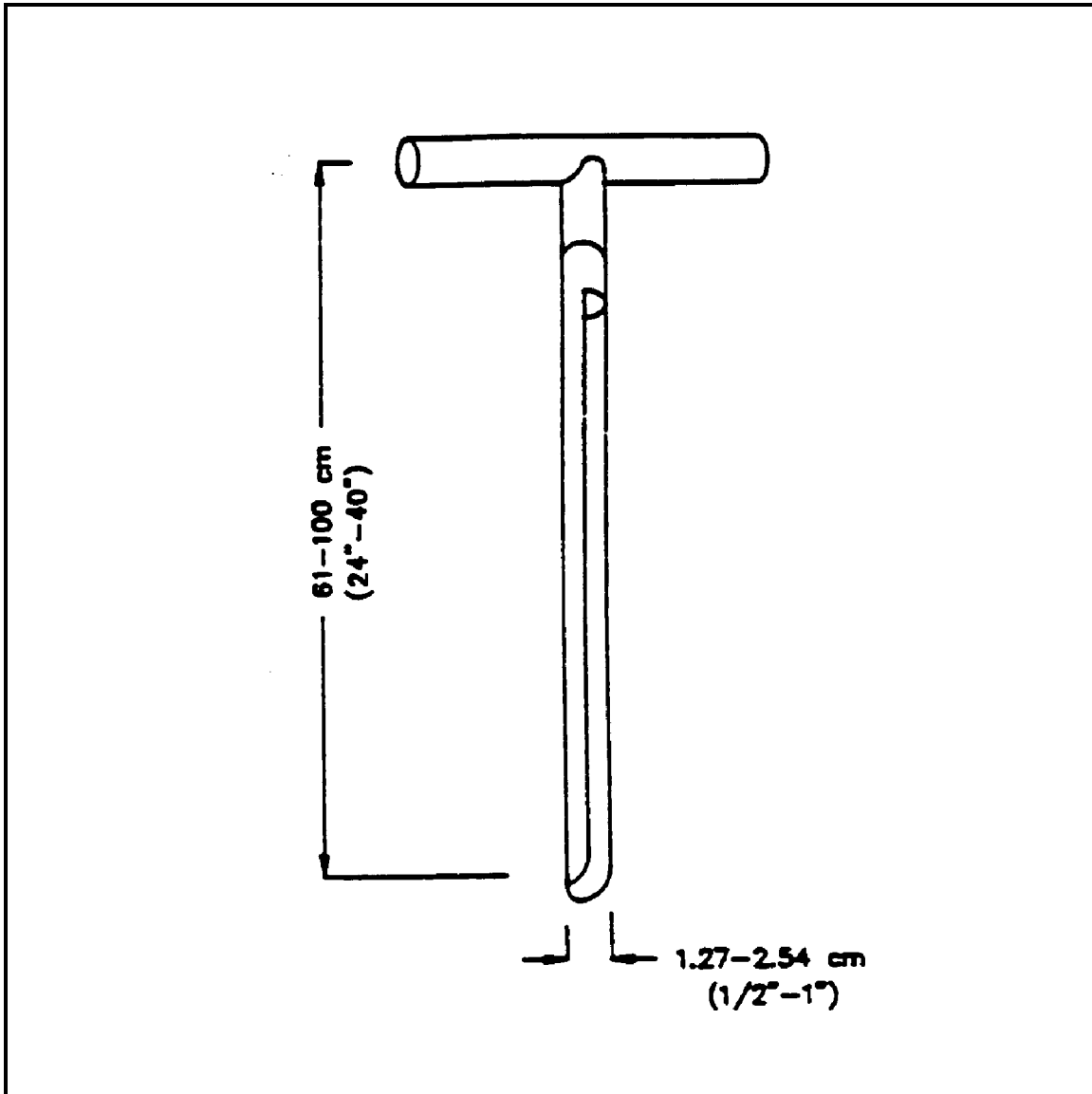
FIGURE 1. Sampling Augers



APPENDIX A (Cont'd)

Figures

FIGURE 2. Sampling Trier



WROP-100-03

OPERATION OF LUDLUM SCALERS WITH LUDLUM MODEL 43-10 ALPHA TRAY COUNTER

1.0 PURPOSE

This procedure describes the method used for analyzing wipe samples for removable gross alpha contamination resulting from the remediation activities at the DuPont Deepwater Project.

Scope. Removable alpha contamination measurements are required as the result of a variety of activities during the Project remediation. The process of collecting a smear involves Radiation Protection Technicians (RPTs) wiping a potentially contaminated area of 100 square centimeters (cm²) with a clean, dry filter paper or similar media. WROP-04-410 and WROP-04-411 describe the specific procedures for the collection of smear samples. The smear is dried (if necessary) and counted by the RPT in a Ludlum Model 43-10 alpha tray counter linked to a Model 2000 scaler or equivalent. Counting times will be based on counting statistics and associated parameters, in accordance with WROP-03-300. All counting times shall be approved by the Radiation Safety Manager (RSM).

Potential applications of this procedure include the following:

- Items taken into radiological control areas that do not have surfaces that may be readily surveyed with a portable survey detector.
- Items shown to have total surface alpha contamination level exceeding the surface activity guidelines that may be found in Attachment 100-03-1.
- Items that are to be released from the site for unrestricted use.

The following activities are described in Section 4.0 of this procedure:

- 4.1 General
- 4.2 Determination of Background
- 4.3 Survey Requirements
- 4.4 Collection of Wipe Samples
- 4.5 Counting of Wipe Samples.

2.0 REFERENCES

WESTON Radiological Operations Procedure WROP-04-425, "Radiological Survey Documentation."

WESTON Radiological Operations Procedure WROP-03-300, "Portable Radiation Monitoring Instruments Operation."

WESTON Radiological Operations Procedure WROP-04-410, "Radioactive Contamination Surveys."

WESTON Radiological Operations Procedure WROP-04-411, "Contamination Surveys of Materials, Equipment, and Portable Facilities to be Released for Unrestricted Use."

WESTON Radiological Operations Procedure WROP-04-412, "Free Release of Heavy Equipment."

WESTON "Radiation Safety Program Manual."

DuPont Deepwater Project "Site Health and Safety Plan" (HASP).

3.0 GENERAL

3.1 Equipment

- Ludlum Model 43-10 Alpha Tray Counter
- Ludlum Model 2000 Scaler or equivalent scaler/ratemeter
- Smears or wipe sampling media
- Planchets (stainless steel or aluminum)
- Tweezers
- Forms from WROP-04-425
- Appropriate alpha check source
- Hand-held calculator
- Approved cleaning solution (i.e., distilled water)
- Q-tip cleaning swabs

3.2 Safety Considerations

All work activities performed under this procedure shall be in accordance with the Project HASP and the Radiation Safety Program Manual.

3.3 Responsibilities

3.3.1 RSM is responsible for:

- Ensuring that RPTs are qualified to perform this procedure.
- Reviewing, approving, and transmitting the documentation generated during the performance of this procedure.
- Maintaining knowledge of the contents of the operating procedures affecting the conduct of contamination surveys, and communicating the pertinent requirements to the RPTs performing this procedure.
- Ensuring that RPTs are trained regarding this procedure.

3.3.2 RPTs are responsible for:

- Performing contamination wipe sample analysis in accordance with this procedure.
- Discussing specific project contamination survey requirements with the RSM. If an RPT is unable to perform this procedure due to errors, extenuating circumstances, or any other reason, the RPT shall immediately stop and notify the RSM. All changes in sampling and survey protocol must be documented in field logbooks and on appropriate survey forms.

3.4 Prerequisites

Personnel shall be properly trained in the performance of this procedure prior to independent performance, as required by pertinent Radiation Safety Training procedures and project protocols.

3.5 Records

All records generated by this procedure are used in the Project Radiation Safety Program to document contamination levels of work areas and materials onsite. The records are stored, arranged, indexed, retrieved, scheduled, retained, and disposed of in accordance with WROP-04-425 and the Project Recordkeeping Procedures.

3.6 Precautions and Limitations

Not applicable.

3.7 Revisions

All revisions shall be controlled by the RSM.

3.8 Other

Section 4.0 of this procedure implements requirements of 10 Code of Federal Regulations (CFR) 835.404.

4.0 PROCEDURE

4.1 General

- 4.1.1 Ensure that the Ludlum Model 2000/ Model 43-10 has been subject to a operation function check in accordance with WROP-03-300.

Note: Operation instructions for the Ludlum Model 2000 may be found in Attachment 23 of WROP-03-300.

- 4.1.2 Check with the RSM to ensure that the proper counting time has been specified.

4.1.3 Obtain the appropriate radiological survey data form and complete the introductory information. A sample form is included as Attachment 2 of WROP-04-425.

4.1.4 Before counting a sample, clean the tray and the counting chamber using a swab dampened with an approved cleaning solution (i.e., distilled water). Ensure that enough time has past to allow the tray and chamber to dry before attempting to count a survey. The tray and chamber should be cleaned daily at a minimum.

4.2 Determination of Background

4.2.1 Count an unused wipe sample for the specified counting time.

<p>Note: Instrument background may change throughout the day. Background counts should be collected at a minimum of two times per day. Preferably one background count should be collected at the time of the operational function check and then one count should be collected 4 to 5 hours later.</p>
--

4.2.2 Record the background count in the appropriate column of the radiological survey sheet.

4.3 Survey Requirements

4.3.1 Survey requirements for samples to be counted in accordance with this procedure are contained in the Project RWPs, Operating Plan Guidance Manual, Sampling and Analysis Plan (SAP), HASP, Radiation Safety Program Manual, Waste Management Plan, and other Radiological Operations Procedures.

4.4 Collection of Wipe Samples

4.4.1 Techniques and procedures for performing contamination surveys using wipes and smears may be found in WROP-04-410, -411, and -412.

4.5 Counting of Wipe Samples.

4.5.1 Obtain a wipe sample from the sample in-box and record the sample number and the sample description on the Radiological Survey Form.

4.5.2 Place the wipe sample in a planchet.

4.5.3 Open the counting chamber and place the planchet containing the wipe sample into the sample tray.

4.5.4 Slide the tray under the detector until a click is heard. The click is the activation of a switch that applies high voltage to the detector (essentially it is the detector on/off switch). Gently turn the tray lock knob towards you, just enough to hold the tray in place.

Caution: Do not over tighten the tray lock knob!!

- 4.5.5** Depress the count switch. A red light should appear designating that a count is in progress. Count each wipe sample for the period of time determined by the RSM.

Note: The counting time for the wipe sample analysis should be equal to the background count time.

- 4.5.6** The count light going out designates the completion of the counting time. Record the gross counts on the radiological survey form and calculate the contamination values based on the detector efficiency and the background.
- 4.5.7** Immediately notify the RSM if a sample result is found to be greater than the surface activity guidelines found in Attachment 100-03-1.
- 4.5.8** Forward the completed Radiological Survey Form to the RSM for review and filing.

5.0 ATTACHMENTS

Attachment 100-03-1 Surface Activity Guidelines

WROP-100-03

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ATTACHMENT 100-03-1
SURFACE ACTIVITY GUIDELINES

ATTACHMENT 100-03-1
SURFACE ACTIVITY GUIDELINES
ALLOWABLE TOTAL RESIDUAL SURFACE ACTIVITY (dpm/100cm²)⁽⁴⁾

Radionuclides ⁽⁵⁾	Average ⁽⁶⁾⁽⁷⁾	Maximum ⁽⁸⁾⁽⁹⁾	Removable ⁽⁹⁾
Group 1 - Transuranics, I-125, I-129, Ac-227, Ra-226, Ra-228, Th-228, Th-230, Pa-231	100	300	20
Group 2 - Th-natural, Sr-90, I-126, I-131, I-133, Ra-223, Ra-224, U-232, Th-232	1,000	3,000	200
Group 3 - U-natural, U-235, U-238, and associated decay products, alpha emitters.	5,000	15,000	1,000
Group 4 - Beta-gamma emitters (radionuclides with decay modes other than alpha emission or spontaneous ⁽¹⁰⁾ fission) except Sr-90 and others noted above	5,000	15,000	1,000
Tritium (applicable to surface and subsurface) ⁽¹¹⁾	N/A	N/A	10,000

Source: Table and notes from "Response to Questions and Clarification of Requirements and Processes: DOE 5400.5, Section II.5 and Chapter IV Implementation (Requirements Relating to Residual Radioactive Material)," November 17, 1995.

- (4) As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by counts per minute measured by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.
- (5) Where surface contamination by both alpha- and beta-gamma emitting radionuclides exists, the limits established for alpha- and beta-gamma emitting radionuclides should apply independently.
- (6) Measurements of average contamination should not be averaged over an area of more than 1 m². For objects of less surface area, the average should be derived for each such object.
- (7) The average and maximum dose rates associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/h and 1.0 mrad/h, respectively, at 1 cm.
- (8) The maximum contamination level applies to an area of not more than 100 cm².
- (9) The amount of removable material per 100 cm² of surface area should be determined by wiping an area of that size with dry filter or absorbent paper, applying moderate pressure, and measuring the amount of radioactive material on the wiping with an appropriate instrument of known efficiency. When removable contamination on objects of surface area less than 100 cm² is determined, the activity per unit area should be based on the actual area and the entire surface should be wiped. It is not necessary to use wiping techniques to measure removable contamination levels if direct scan surveys indicate that the total residual surface contamination levels are within the limits for removable contamination.
- (10) This category of radionuclides includes mixed fission products, including Sr-90 that is present in them. It does not apply to Sr-90 that has been separated from the other fission products or mixtures where the Sr-90 has been enriched.
- (11) Property recently exposed or decontaminated, should have measurements (smears) taken at regular time intervals to ensure that there is not a build-up of contamination over time. Because tritium typically penetrates the material it contacts, the surface guidelines in group 4 are not applicable to tritium. The Department has reviewed the analysis conducted by the DOE Tritium Surface Contamination Limits Committee ("Recommended Tritium Surface Contamination Release Guides," February 1991), and has assessed potential doses associated with the release of property containing residual tritium. The Department recommends the use of the stated guideline as an interim value for removable tritium. Measurements demonstrating compliance of the removable fraction of tritium on surfaces with this guideline are acceptable to ensure that non-removable fractions and residual tritium in mass will not cause exposures that exceed DOE dose limits and constraints.

WROP-08-810

LAND AREA GAMMA SURVEYS USING NAI DETECTORS

1.0 PURPOSE

The purpose of this procedure is to provide guidance to Radiological Protection Technicians (RPTs) in performing area scan surveys using NaI detectors. This procedure specifically applies to scanning surveys on open land areas, but may be useful for other land survey situations.

The following activities are described in Section 4.0 of this procedure:

- 4.1 Survey Setup and Background Determination
- 4.2 Survey Techniques
- 4.3 Follow-Up Actions

2.0 REFERENCES

U.S. Department of Energy (DOE). "Environmental Implementation Guide for Radiological Survey Procedures," Draft, November, 1992.

WESTON "Radiation Safety Program Manual."

WESTON Radiological Operations Procedure WROP-03-300, "Portable Radiation Monitoring Instrument Operation."

WESTON Radiological Operations Procedure WROP-04-425, "Radiological Survey Documentation."

3.0 GENERAL

3.1 Equipment

- Eberline ESP-2 (or equivalent) with 2x2 NaI detector.
- Ludlum Model 2221 (or equivalent) with Ludlum 44-10 2x2 NaI detector.
- Collimated Shield

3.2 Safety Considerations

All work activities performed under this procedure shall be in accordance with the Project HASP and the Radiation Safety Program Manual.

3.3 Responsibilities

3.3.1 The Radiation Safety Manager (RSM) is responsible for:

- Assuring that RPTs are qualified to perform this procedure and are documented as such.
- Reviewing and approving all survey documentation generated as a result of this procedure.
- Assuring that training on this procedure is developed, kept up-to-date, and offered to RPTs needing it. The RSM is also responsible for documentation of training completion.

3.3.2 RPTs are responsible for:

- Following this procedure. If unable to follow this procedure due to mistakes, extenuating circumstances, or for any other reason, the RPT shall immediately stop and notify the RSM.

3.4 Prerequisites

3.4.1 Prior to surveying, determine the survey pattern to be used, and the percent coverage necessary for the site. This may be in the form of a grid, survey transects, or discreet survey points, depending on the site size, topography, and other variables. The pattern, and percent coverage, should be in the SAP. When possible, deviations to the plan should be reviewed with the requester prior to making the change. When this is not practical, note any deviations in the survey remarks for later review.

3.4.2 Prior to use each day, perform an operational function check of the instrument(s), in accordance with WROP-03-300.

3.4.3 With the guidance of the RSM, determine the mode of ESP-2 operation/Ludlum Model 2221 or equivalent for the survey to be performed (i.e., ratemeter or scaler mode).

Note: Using the ESP-2/Ludlum Model 2350 data-logging functions, and the "Scaler/Average Rate" mode (30 second count times), can significantly reduce the amount of recordkeeping required in the field; however, care must still be taken to keep track of survey locations vs. data storage locations.

When the equipment and procedures are available, and if required, a correlation between NaI counts per minute (cpm) and $\mu\text{R/hr}$, using a Pressurized Ion Chamber (PIC), may be performed in accordance with WROP-100-17. This correlation should be performed in a radiation field similar to the field of interest (i.e., background, depleted uranium, Cs-137, etc.) for greatest accuracy.

3.5 Records

Radiological survey records are generated during the process of implementing this procedure. The original of the records is the record copy for the Project. The

record copy is given to the RSM for processing, including arrangement and filing. Copies of the records may be made for information purposes.

These records are used by the project to document radiological surveys.

The records are stored, arranged, indexed, retrieved, scheduled, retained, and disposed of in accordance with the Project Recordkeeping Procedures and file system.

3.6 Precautions and Limitations

The results of this screening alone should not be used to determine protective clothing, respiratory protection, or waste management requirements, but should be used as a screening tool to indicate the need for additional surveys or analysis.

3.7 Revisions

Not applicable.

4.0. PROCEDURE

4.1 Survey Setup and Background Determination

- 4.1.1** Mark the land area to be surveyed so that the desired survey pattern can be achieved. A compass and tape measure are recommended for this purpose. Markings may be in the form of pin flags, paint markings (environmentally safe) on the ground, fence posts/wooden lath, or natural or man-made landmarks. Whenever possible, reference distances and compass directions from at least one natural landmark or building so that the survey can be reproduced, if necessary, at a later date.
- 4.1.2** Perform ESP-2/Ludlum 2221 or equivalent setup for the correct detector and mode of operation (as determined in step 3.4) in accordance with WROP-03-300.
- 4.1.3** Perform a minimum of five one-minute integrated counts. If practical, perform at least one measurement outside of each site boundary (approx. north, south, east, and west), with the detector at ground level.
- 4.1.4** Record the background readings on the Background Determination Log (Attachment 1).
- 4.1.5** Average the four (or more) readings to establish background for the area, and record on the Background Determination Log and Radiological Survey Form.
- 4.1.6** Calculate the action level (A.L.) at one-and one-half (1.5) times the mean background and record on the Background Determination Log. A lower A.L. may be established, at the RPT's discretion, if the area background measurements are very consistent. This shall be noted in the Comments section of the Background Determination Logsheet.

4.2 Survey Techniques

- 4.2.1** Operate the survey instrument in accordance with WROP-03-300.
- 4.2.2** Hold the probe approximately 2 inches above the ground surface.
- 4.2.3** Walking at a speed of approximately one to two feet per second, move the probe back and forth to cover a survey path approximately five to six feet wide. To help gauge your speed, a 1.5-meter (5-foot) wide by 10-meter long path should take about one minute. This survey rate will result in ten percent coverage, assuming that the detector will cover a path six inches wide (detector diameter plus two inches on either side).

Note: The rate of forward progress should be adjusted based on the percent coverage desired.
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- 4.2.4** Listen to the instrument audible response. Any detectable increase should be investigated.
- 4.2.5** Stop, back up, and slow down the survey speed to pinpoint the source.
- 4.2.6** If the audible increase cannot be reproduced, then proceed with the survey.
- 4.2.7** Record the elevated location, and the maximum reading obtained, on the survey map.
- 4.2.8** Perform and record a waist-high reading directly above the elevated location.
- 4.2.9** Record the survey results in accordance with WROP-04-425. In the Radiation Survey column of the Radiological Survey Form, line-out "mrem/hr", and write "cpm" in the heading.
- 4.2.10** If the scaler mode is used, then record, as a minimum, the highest count obtained on a given grid or transect, in addition to the alarm locations recorded previously.
- 4.2.11** If the ratemeter mode is used, then the survey results for a particular grid, or transect, may be recorded as "<X" (where X = A.L.), or as a range of readings if no detectable activity is found. Record all locations with detectable activity as in Step 4.2.9.

4.3 Follow-up Actions

Follow-up actions may include any or all of the following, depending on the situation. The actual follow-up to be performed should be discussed with the Project Manager and RSM.

- 4.3.1** In-situ gamma spectroscopy.
- 4.3.2** Soil sampling.

4.3.3 Dose rate measurements.

4.3.4 Surface contamination measurements.

5.0 ATTACHMENTS

Attachment 08-810-1 Background Determination Log

Attachment 08-810-2 Standard Deviation Formula

WROP-08-810

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ATTACHMENT 08-810-1
BACKGROUND DETERMINATION LOG

ATTACHMENT 08-810-1 **BACKGROUND DETERMINATION LOG**

Date: _____ Instrument Function checked ____ Yes ____ No

Project Location _____ RPT Signature _____

Project Description: _____

Inst. Type _____ Inst. S/N _____ Time _____	Inst. Type _____ Inst. S/N _____ Time _____	Inst. Type _____ Inst. S/N _____ Time _____
Sample Location Sample #	Sample Location Sample #	Sample Location Sample #
Background Readings (units) 1) _____ 2) _____ 3) _____ 4) _____ 5) _____ 6) _____ 7) _____ 8) _____ 9) _____ 10) _____	Background Readings (units) 1) _____ 2) _____ 3) _____ 4) _____ 5) _____ 6) _____ 7) _____ 8) _____ 9) _____ 10) _____	Background Readings (units) 1) _____ 2) _____ 3) _____ 4) _____ 5) _____ 6) _____ 7) _____ 8) _____ 9) _____ 10) _____
Mean Background $\bar{X} =$	Mean Background $\bar{X} =$	Mean Background $\bar{X} =$
Standard Deviation $\sigma_{n-1} =$	Standard Deviation $\sigma_{n-1} =$	Standard Deviation $\sigma_{n-1} =$
Action Level A.L. =	Action Level A.L. =	Action Level A.L. =
Comments	Comments	Comments

Note: Units always should be in counts/minute.

BACKGROUND DETERMINATION LOG

Date: _____ Instrument Function checked ____ Yes ____ No

Project Location _____ RPT Signature _____

Project Description: _____

Inst. Type _____ Inst. S/N _____ Time _____	Inst. Type _____ Inst. S/N _____ Time _____	Inst. Type _____ Inst. S/N _____ Time _____
Sample Location Sample # _____	Sample Location Sample # _____	Sample Location Sample # _____
Background Readings (units) 1) _____ 2) _____ 3) _____ 4) _____ 5) _____ 6) _____ 7) _____ 8) _____ 9) _____ 10) _____	Background Readings (units) 1) _____ 2) _____ 3) _____ 4) _____ 5) _____ 6) _____ 7) _____ 8) _____ 9) _____ 10) _____	Background Readings (units) 1) _____ 2) _____ 3) _____ 4) _____ 5) _____ 6) _____ 7) _____ 8) _____ 9) _____ 10) _____
Mean Background $\bar{X} =$ _____	Mean Background $\bar{X} =$ _____	Mean Background $\bar{X} =$ _____
Standard Deviation $\sigma_{n-1} =$ _____	Standard Deviation $\sigma_{n-1} =$ _____	Standard Deviation $\sigma_{n-1} =$ _____
Action Level A.L. = _____	Action Level A.L. = _____	Action Level A.L. = _____
Comments 	Comments 	Comments

Note: Units always should be in counts/minute.

ATTACHMENT 08-810-2
STANDARD DEVIATION FORMULA

ATTACHMENT 08-810-2 STANDARD DEVIATION FORMULA

Mean \bar{x} -- average count obtained for the background samples -- the mean is calculated as shown below.

$$\bar{x} = \frac{(x_1 + x_2 + x_3 \dots + x_n)}{n}$$

where

\bar{x} = the mean of the background counts

n = number of samples

$(x_1 + x_2 + x_3 \dots + x_n)$ = summation of count results for all background counts measured

Standard deviation (σ_{n-1}) — standard deviation of the mean is calculated as shown below:

$$\text{Standard deviation} = (\sigma_{n-1}) = \left[\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n - 1} \right]^{1/2}$$

Units shall accompany calculations.

Action Levels (A.L.)

Sample Screening A.L.

$$\bar{x} + 3\sigma_{n-1}$$

Area Surveys A.L.

$$\bar{x} \bullet 1 \frac{1}{2}$$

*Excavation Control A.L.

$$\bar{x} \bullet 2$$

* Note geometry considerations when using this A.L. for excavation control. Wall gamma shine may cause false anomalies.

WROP-03-300

PORTABLE RADIATION MONITORING INSTRUMENT OPERATIONS

1.0 PURPOSE

The purpose of this procedure is to provide instructions on the response/source checking and basic operation of the portable hand-held radiation survey instruments used on the Project. Instructions are included for performing, documenting, and reviewing the source checks and for documenting instrument inventory and use.

Scope. This procedure applies to the Project radiation safety personnel who receive, use, decontaminate, and return portable radiation survey instruments to the WESTON Radiological Equipment Store (RES).

The following activities are described in Section 4.0 of this procedure:

- 4.1 Instrument Inventory
- 4.2 Pre-Operation Function Checks
- 4.3 Return Of Instruments

2.0 REFERENCES

NUREG/CR-5849, "Manual for Conducting Radiological Surveys in Support License Termination."

U.S. Department of Energy (DOE), "Occupational Radiation Protection," 10 Code of Federal Regulations (CFR) 835, November 1, 1993.

U.S. Department of Energy, "Radiological Control Manual," DOE/EH-0256T, April 1994.

U.S. Department of Energy, "Radiation Protection For Radiation Workers," DOE Order 5480.11, July 20, 1989.

U.S. Department of Energy, "Environmental Protection, Safety, and Health Protection Information Reporting Requirements," DOE Order 5484.1, November 6, 1987.

U.S. Department of Energy, "Quality Assurance," DOE Order 5700.6C, August 21, 1991.

U.S. Department of Energy, "Health Physics Manual of Good Practices for Reducing Radiation Exposure to Levels That Are Low As Reasonably Achievable (ALARA)," DOE/PNL-6577, July, 1988.

American National Standard, ANSI N323-1978, May 26, 1978, Section 4.6.

Various manufacturers' (Ludlum, Eberline, Bicron, etc.) Instrument Technical Manuals.

DuPont Deepwater Project "Site Health and Safety Plan (HASP)."

3.0 GENERAL

3.1 Equipment

Radioactive sources of appropriate activity and isotope(s) for instrument(s) to be source checked.

See Attachments 03-300-3 through 03-300-32 for portable survey instruments.

3.2 Safety considerations

All sources should be controlled under the use of radiological work permits (RWPs).

Some of the sources used to perform instrument source checks have intense beta emission rates. Beta eye protection should be worn when using strong beta sources. Do not leave the source exposed longer than required.

All instruments shall be operated in accordance with the project HASP and Radiation Safety Program Plan Manual.

3.3 Responsibilities

3.3.1 Radiation Safety Manager (RSM) is responsible for:

- The implementation of this procedure.
- Assuring that the Radiological Protection Technicians (RPTs) are qualified to perform this procedure and are documented as such.
- Maintaining knowledge of the contents of this procedure.
- Periodic review of the documentation required by this procedure and for ensuring that completed source check logsheets are reviewed and forwarded to the Project file system.

3.3.2 Radiological Protection Technician are responsible for:

- The use of portable survey instruments in strict accordance with this procedure.
- Discussing specific project requirements with the RSM. If, for any reason, a RPT is unable to perform this procedure due to errors, extenuating circumstances, or any other reason, the RPT shall immediately stop and notify the RSM. All changes in protocol must be documented in the appropriate field log books and forms.

3.4 Prerequisites

Not applicable.

3.5 Records

Radiological survey and instrumentation records are generated during the process of implementing this procedure. The original of the records is the record copy for the Radiation Safety Program. The record copy is given to the RSM for initiating processing, including arrangement and filing. Copies of the records may be made for informational purposes.

The records are stored, arranged, indexed, retrieved, scheduled, retained, and disposed of in accordance with the Project Recordkeeping Procedures and file system.

3.6 Precautions and Limitations

Not applicable.

3.7 Revisions

Not applicable.

3.8 Other

Not applicable.

4.0 PROCEDURE

4.1 Instrument Inventory

4.1.1 New Issuance Instrument or Instrument Returned from Calibration

- a. Upon receipt of an instrument, complete and sign the "Standard Laboratory Calibration Recall Notice" card (accompanies the instrument from WESTON) and return the card to WESTON RES.
- b. Complete the instrument information on a "Portable Instrument Function Check" form (Attachment 03-300-1). The Aptec Model C7M Hand and Shoe Monitor "Function Check" checklist may be found in Attachment 03-300-32.

Note: Attachment 1 may be modified to follow specific instrument check-offs, as needed.
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- c. Perform initial source check reading in accordance with Section 4.1.2.

4.1.2 New Issuance Instrument or Instrument Returned from Calibration

- a. Determine the instrument response for each scale or decade normally used, and for which sources are available, as follows:
 - Determine the source(s) and jigs required using Attachment 03-300-30 or -31.
 - Record Source ID number.

- Select the desired scale on the instrument.
 - Place the source in the specified position on the jig, as appropriate.
 - Place the instrument/detector in the specific position on the jig.
 - Allow sufficient time for the instrument to fully respond and the meter to stabilize.
 - Observe the gross reading on the selected scale after response has stabilized.
 - Move the detector away from the source.
 - Repeat the previous four steps at least two times. If any one reading deviates from the average by more than 20%, obtain another reading to replace it.
- b. Calculate and record on the logsheet the -20% and +20% values for the source, using the average value as the Reference Reading.
- c. Complete Steps a. and b. for the remaining scales, sources and probes to be used.

Note: If there is any reason to suspect that the instrument is not responding properly to the source, contact the RSM for further guidance and possible return of the instrument to WESTON RES for evaluation.

- d. Place the logsheet in the appropriate logsheet book or clipboard.

Note: Perform a new Initial Response when the response check source used is different than the original Initial Response check source.

- e. Return sources and jigs to their storage locations.

4.2 Instrumentation Function Checks

4.2.1 Obtain the instrument to be used for the desired measurements using the guidance in Attachments 03-300-3 through-32.

- a. Select the instrument based on the survey needs and:
- Detection capabilities for the type, energy, and intensity expected
 - Interference from mixed radiation fields
 - ALARA considerations
 - Environmental conditions
- b. Known conditions affecting survey instrumentation as a whole include:

- Ion chambers using reed switches for scale changing can malfunction when used in magnetic fields such as those found around rotating machinery, large electric motors, or any equipment containing magnetos.
 - Large changes in altitude may impact instrument response. Evaluate the need to use correction factors on the observed instrument response.
 - Use of ion chambers in very cold or very hot applications may require use of correction factors to correct the observed instrument response.
 - Microprocessor based instrumentation is extremely susceptible to electrical changes. When using these instruments, exercise caution to preclude touching equipment which may be charged.
 - Changing detector cable lengths may impact instrumentation signal response time.
- c. Verify that the instrument calibration label is in place and indicates that the calibration has not expired.
- d. Perform a battery check.
- Turn to each battery check position (for manual selection).
 - Verify that the response is within the allowable limits.
- e. For alpha scintillation probes, perform the following inspection:
- Remove the protective shield from the scintillation probe.
 - Examine the detector window to ensure that it is not damaged. It must be free of holes and cracks for the instrument to operate properly. If there is any damage that cannot be repaired in the field, return the instrument for repairs.
 - Replace the protective shield.

4.2.2 Checking physical condition of the instrument:

- a. Record the date on the next available line in the “Daily/Prior to Use Physical/Source Check” section.
- b. Examine the instrument for any physical damage.
- Check the body of the instrument (i.e. meter face for cracks, handle for damage, loose snaps).
 - Check external cord for frays, cuts, shorts, loose wires and connections.
 - Check detector surface for punctures or body damage on detector housing.

- Check the analog meter indicator to read “zero” or minimum indication in normal use position with power off.
- c. Check that the instrument calibration label is in place and indicates that the calibration has not expired.
- d. Perform a battery check.
 - Turn to each battery check position (for manual selection).
 - Verify that the response is within the allowable limits.
- e. For alpha scintillation probes, perform the following inspection:
 - Remove the protective shield from the scintillation probe.
 - Examine the detector window to ensure that it is not damaged. It must be free of holes and cracks for the instrument to operate properly. If there is any damage that cannot be repaired while in the field, return the instrument for repairs.
 - Replace the protective shield.
- f. Perform a High Voltage check, if applicable.
- g. Adjust the electronic zero of the instrument, if applicable.

4.2.3 Performing daily/prior to use function checks on portable instrumentation:

- a. Obtain the source(s)/jigs listed on the logsheet(s) for the instrument(s) to be source checked.
- b. Complete the next available line on the Portable Instrument Pre-Operational Source Check Sheet using the appropriate sources as follows:
 - Turn the range selector switch to the appropriate scale for the source being used.
 - Place the instrument and the source in the same geometry used for the initial (post-calibration) source check.
 - Observe the gross check source reading on the selected scale after the instrument response has stabilized.
- c. Repeat Step b. and c. for all the scales or decades normally used.
- d. Record the reading in the appropriate block of the Function Check Log Sheet.
- e. Compare all instrument readings with the appropriate Initial Reading to determine if they fall within $\pm 20\%$ of the Reference Readings.

- If any reading is not within $\pm 20\%$ of the Reference Reading, circle the reading and initial, inform the RSM and proceed to Section 4.3.1 of this procedure.
 - Initial the appropriate block of the Source Check Sheet.
- f. Plot the function check result (EFFICIENCY) on the Function Check Graph Log. Check the graph for out-of-range trends (Attachment 03-300-2).

4.2.4 Performing daily/prior to use functional check of the Aptec Model C7M Hand and Shoe Monitor.

- a. Approach the C7M and observe the display panel. The "C7" message should be visible on the display.
- b. While observing the display panel, step onto the foot grills. The foot symbols will illuminate, then go out. The "Push Hands In - Center Each Shoe" message and the hand symbols will be illuminated and remain on.
- c. Insert the hands into the hand detector ports and push on the rear plates. The hand symbols will go out. The "Push Hands In - Center Each Shoe" message will go out and the "Counting" message will be illuminated.
- d. Hold still until the counting cycle is completed. The "Clean" message should be illuminated.
- e. Pull the hands back and then reinsert them to initiate another counting cycle. After the counting cycle has started, withdraw the left hand from the hand port. An audible alarm will sound and the "Removed Too Soon" message will be illuminated. The left hand symbol will also be illuminated.
- f. Reinsert the left hand and press on the rear plate. The counting cycle will restart.
- g. Repeat steps e and f for the right hand detector.
- h. Repeat steps e and f for the left shoe detector.
- i. Repeat steps e and f for the right shoe detector.
- j. In order to ensure that the lamp system is functional, depress the "Lamp Test" button on the bottom of the top section and hold it down. All of the display panel symbols should be illuminated.
- k. Obtain a radioactive Beta check source of greater than 5,000 dpm.
- l. Place the calibration source in the left hand port. Initiate a counting cycle by positioning the right hand and the shoes in place for

counting. An audible alarm should sound and the left hand symbol, together with the "Contaminated" message, should be illuminated. The count rate will appear on the LCD display. Repeat this procedure for the right hand detectors, the left shoe detector, and the right shoe detector.

m. Complete the "Function Check" checklist contained in Attachment 03-300-32.

n. If any part of the function check is failed by the instrument, contact the RSM who will contact the RPTSD.

4.3 Return of Instruments

4.3.1 Perform a radiation and contamination survey on the instrument prior to release to the RES. For WESTON equipment, consult the RSM for decontamination procedures. Document the decontamination on the WESTON Return Material Decontamination Certificate.

4.3.2 Return radiation monitoring instruments to WESTON RES for calibration and repair

4.3.3 If, at any time, an instrument is damaged during use, fails any of the pre-operational check process, or is re-called from the instrument supplier:

- Attach an "Out of Service" tag to the instrument.
- Return the instrument to the RES.

4.3.4 Route the "Portable Instrument Pre-Operational Source Check Sheet" and "check lists" to the RSM, or designee.

5.0 ATTACHMENTS

Attachment 03-300-1	Portable Instrument Function Check Logsheet
Attachment 03-300-2	Function Check Graph Log
Attachment 03-300-3	MDA Calculation Work Sheet
Attachment 03-300-4	Operation of the ELECTRA with DP 6 Dual Scintillation Probe (**)
Attachment 03-300-5	Operation of the Xetex Model 501A (**)
Attachment 03-300-6	Operation of the Ludlum Model 2350 (**, WESTON)
Attachment 03-300-7	Operation of the Eberline Model RO-3C (**)
Attachment 03-300-8	Operation of the Eberline Model PIC-6B (**)
Attachment 03-300-9	Operation of the Eberline Model ESP-2 (**)

Attachment 03-300-10	Operation of the Eberline Model ASP-1 (**)
Attachment 03-300-11	Operation of the Ludlum Model 2221 with Ludlum Model 239-1F Floor Monitor (**, WESTON)
Attachment 03-300-12	Operation of the Bicron Model Micro Rem (**)
Attachment 03-300-13	Operation of the Bicron Model 2000 (**)
Attachment 03-300-14	Operation of the Eberline RM-14SA (**)
Attachment 03-300-15	Operation of the Eberline Model RM-20 (**)
Attachment 03-300-16	Operation of the XETEX 302B High Level Probe (**)
Attachment 03-300-17	Operation of the Bicron RSO-50 and RSO 500 (**)
Attachment 03-300-18	Operation of the Ludlum Model 12 (WESTON)
Attachment 03-300-19	Operation of the Ludlum Model 3 (WESTON)
Attachment 03-300-20	Operation of the Ludlum Model 9 (WESTON)
Attachment 03-300-21	Operation of the Ludlum Model 2200 (WESTON)
Attachment 03-300-22	Operation of the Ludlum Model 2220 (WESTON)
Attachment 03-300-23	Operation of the Ludlum Model 2000 (WESTON)
Attachment 03-300-24	Operation of the Ludlum Model 2300 (WESTON)
Attachment 03-300-25	Operation of the Ludlum Model 19 (WESTON)
Attachment 03-300-26	Operation of the Bicron Analyst (WESTON)
Attachment 03-300-27	Operation of the Bicron Labtech (WESTON)
Attachment 03-300-28	Operation of the Ludlum Model 2221 (WESTON)
Attachment 03-300-29	Operation of the Ludlum Model 77-3 (WESTON)
Attachment 03-300-30	** Radiation and Contamination Survey Instruments
Attachment 03-300-31	WESTON Radiation and Contamination Survey Instruments
Attachment 03-300-32	Operation of the Aptec Model C7M Hand and Shoe Monitor (**)

ATTACHMENT 03-300-18
OPERATION OF THE LUDLUM MODEL 12

ATTACHMENT 03-300-18
OPERATION OF THE LUDLUM MODEL 12

1. INSTRUMENT OPERATION

- a. Examine the instrument for physical damage in accordance with Section 4.2.2. Do not use if damaged.
- b. Check the instrument calibration sticker. Do not use if out of calibration.
- c. Battery Installation
 - 1) Slide the battery box button down. Open the lid and install two "D" size batteries. Note (+) (-) marks on the inside of the lid. Match the battery polarity to these marks.
 - 2) Close the battery box lid.

Note: Center post of flashlight battery is positive. Do not twist lid button - it slides to the rear.

- d. Switch the range switch to BAT. The meter should deflect to the battery check portion of the meter scale. If the meter does not respond, recheck that the batteries have proper polarity. If meter deflection is within the battery check portion of the scale, the batteries are "OK."
- e. Turn the instrument range multiplier switch to X1000. Expose the detector to a radiation check source. The speaker should click with the audio switch turned to the ON position.
- f. Move the range switch to the lower scales until a meter reading is indicated. The toggle switch labeled F-S should have fast response if "F" position and slow response in "S" position.
- g. Depress the RES switch. The meter should zero.
- h. Select appropriate detector and attach to ratemeter with a standard "Type C" cable.
- i. Complete source/response check in accordance with Section 4.2.3, if required.
- j. Perform surveys in accordance with applicable WROPs.

Note: When using M-12 with combination 44-3/42-9, the HV switch must be in the "N" position when using the 42-9 neutron detector, and in the "G" position when using the 44-38 energy-compensated GM-detector.

- k. This ratemeter can be used with a variety of detectors. The most used detector models are Ludlum 44-9, 44-40, 44-10, 43-5, 44-38, and 42-9.

ATTACHMENT 03-300-19
OPERATION OF THE LUDLUM MODEL 3

ATTACHMENT 03-300-19
OPERATION OF THE LUDLUM MODEL 3

1. INSTRUMENT OPERATION

- a. Examine the instrument for physical damage in accordance with Section 4.2.2. Do not use if damaged.
- b. Check the instrument calibration sticker. Do not use if out of calibration.
- c. Battery Installation
 - 1) Slide the battery box button to the rear. Open the lid and install two "D" size batteries. Note (+) (-) marks on the inside of the lid. Match the battery polarity to these marks.
 - 2) Close the battery box lid.

Note: Center post of flashlight battery is positive. Do not twist lid button - it slides to the rear.
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- d. Switch the range switch to BAT. The meter should deflect to the battery check portion of the meter scale. If the meter does not respond, recheck that the batteries have proper polarity. If meter deflection is within the battery check portion of the scale, the batteries are "OK."
- e. Connect the cable to the instrument and detector.
- f. Turn the instrument range multiplier switch to X100. Expose the detector to a check source. The speaker should click with the audio ON-OFF switched to ON.
- g. Move the range switch to the lower scales until a meter reading is indicated. The toggle switch labeled F-S should have fast response if "F" position and slow response in "S" position.
- h. Depress the RES switch. The meter should zero.
- i. Select appropriate detector and attach to ratemeter with a standard "Type C" cable.
- j. Complete source/response check in accordance with Section 4.2.3. if required.
- k. Perform surveys in accordance with applicable WROPs.
- l. This ratemeter can be used with a variety of detectors. Most frequently used detectors are the Ludlum 44-9, 44-40, and 43-5.

ATTACHMENT 03-300-25
OPERATION OF THE LUDLUM MODEL 19

ATTACHMENT 03-300-25 OPERATION OF THE LUDLUM MODEL 19

1. INSTRUMENT OPERATION

- a. Examine the instrument for physical damage in accordance with Section 4.2.2. Do not use if damaged.
- b. Check the instrument calibration sticker. Do not use if out of calibration.
- c. Battery Installation.

Note: To open the Battery Lid, twist the lid button counterclockwise 1/4 turn. To close, twist clockwise 1/4 turn.

- 1) Open the lid and install two "D" size batteries. Note (+) (-) marks on the inside of the lid. Match the battery polarity to these marks.

Note: Center post of flashlight battery is positive.

- 2) Close the battery box lid.
- d. Adjust the audio AUD ON-OFF switch as desired.
 - e. Adjust the meter response F-S switch as desired.
 - f. Select the 0-5000 range with the Range Selector Switch.
 - g. Depress the BAT Test Button. Check the BAT TEST on the appropriate scale. Replace the batteries if the meter pointer is below the BAT TEST line.
 - h. Depress the Light Button (L). Check for light on the meter face.
 - i. Check the meter response in the "F" and "S" positions.
 - j. Check the audio indication with the AUD ON-OFF switch.
 - k. Check the instrument for the proper scale indication with a known source. Check all the ranges for the appropriate scale indication.
 - l. Depress the reset (RES) pushbutton. Check to see that the meter pointer returns to the zero position.
 - m. Complete source/resource check in accordance with Section 4.2.3 if required.
 - n. Perform surveys in accordance with applicable WROP.

ATTACHMENT 03-300-28
OPERATION OF THE LUDLUM MODEL 2221

ATTACHMENT 03-300-28
OPERATION OF THE LUDLUM MODEL 2221

1. INSTRUMENT OPERATION

- a. Examine the instrument for physical damage in accordance with Section 4.2.2. Do not use if damaged.
- b. Check the instrument calibration sticker. Do not use if out of calibration.
- c. Battery Installation
 - 1) Unscrew battery door latch at the end of instrument.
 - 2) Install for "D" size batteries in the battery holder. The correct position of the batteries is indicated on the bottom of the battery door.
 - 3) Depress battery button. The reading should not be less than 400.
- d. Switch the power ON/OFF switch to the ON position. A random number will first be observed in the display, then 8.8:8.8:8.8. The third displayed number will be the program version. (At the time of this printing, program version is #261010.)
- e. Press COUNT pushbutton. The display should zero. Two colons should appear on the display.
- f. Press HOLD pushbutton. The colons should disappear.
- g. Switch LAMP toggle switch to the ON position. LCD display backlighting and two lamps at the bottom of the analog meter should be illuminated.

Note: If the lamp switch is left in the ON position for extended periods of time, battery life will decrease rapidly.
- h. Check TEST pushbutton functions for proper operation.
- i. Instrument and detector operating point is established by setting the probe voltage (HV) and instrument sensitivity (THR). For a given detector system, efficiency, background and noise are fixed by the physical makeup of the detector and rarely vary from unit to unit.
- j. Select appropriate detector and attach the Labtech with a standard "MHV" type cable.
- k. Make sure that all settings and adjustments have been properly made before turning on instrument.
- l. Complete source/response check in accordance with Section 4.2.3 if required.
- m. Perform surveys in accordance with applicable WROPs.



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29 July 2015

Mr. Michael Pheeny
US Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202

RE: Tronox Navajo Area Uranium Mines (NAUM) Sections 35/36 (Cliffside) Mines
Sampling and Analysis Plan (SAP) and Health and Safety Plan (HASP)
EPA Contract No.: EP-W-06-042
Task Order 0041

Submitted via email on 29 July 2015

Dear Mr. Pheeny:

Please find attached the Final Tronox NAUM Sampling and Analysis Plan (SAP) per requirements outlined in Task Order 0041 START Statement of Work for Sections 35/36 (Cliffside) Mines Removal Site Assessment (RSA) and Engineering Evaluation and Cost Analysis (EE/CA) dated 12 June 2015. The SAP includes a Quality Assurance Project Plan (QAPP) and a Quality Assurance Sampling Plan (QASP) as Appendices A and B, respectively. The HASP, provided as a separate pdf file, presents site-specific safety guidance and requirements for Weston's on-site personnel.

Please do not hesitate to contact me should you have any questions.

Very truly yours,
Weston Solutions, Inc.

Cecilia Shappee

Cecilia H. Shappee, P.E.
Program Manager

cc: Mr. Will LaBombard (EPA)
Mr. Warren Zehner (EPA)
Mr. Jon Rinehart (EPA)
Ms. Rena McClurg (EPA)
Mr. David Bordelon (Weston)